KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

bizhub 160/160f
bizhub 161/161f

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KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

SAFETY AND IMPORTANT WARNING ITEMS

Read carefully the Safety and Important Warning Items described below to understand them before doing service work.

IMPORTANT NOTICE

Because of possible hazards to an inexperienced person servicing this product as well as the risk of damage to the product, KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. (hereafter called the KMBT) strongly recommends that all servicing be performed only by KMBT-trained service technicians.
Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, KMBT does not warrant, either explicitly or implicitly, that the information contained in this Service Manual is complete and accurate.
The user of this Service Manual must assume all risks of personal injury and/or damage to the product while servicing the product for which this Service Manual is intended.
Therefore, this Service Manual must be carefully read before doing service work both in the course of technical training and even after that, for performing maintenance and control of the product properly.
Keep this Service Manual also for future service.

DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

In this Service Manual, each of three expressions "⚠ DANGER", "⚠ WARNING", and "⚠ CAUTION" is defined as follows together with a symbol mark to be used in a limited meaning.
When servicing the product, the relevant works (disassembling, reassembling, adjustment, repair, maintenance, etc.) need to be conducted with utmost care.

⚠ **DANGER: Action having a high possibility of suffering death or serious injury**

⚠ **WARNING: Action having a possibility of suffering death or serious injury**

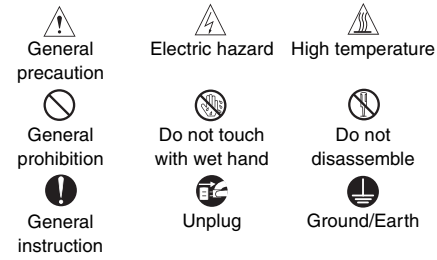
⚠ **CAUTION: Action having a possibility of suffering a slight wound, medium trouble, and property damage**

Symbols used for safety and important warning items are defined as follows:

△ :Precaution when servicing the product.

⃠ :Prohibition when servicing the product.

● :Direction when servicing the product.



SAFETY WARNINGS

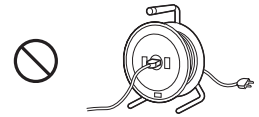
[1] MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

KONICA MINOLTA brand products are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.
Product design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degradation in performance and safety. Such modifications are therefore strictly prohibited. the points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

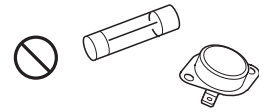
Prohibited Actions

⚠ DANGER

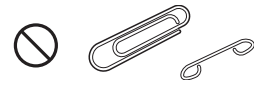
- Using any cables or power cord not specified by KMBT.



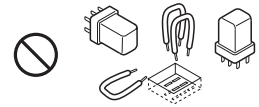
- Using any fuse or thermostat not specified by KMBT. Safety will not be assured, leading to a risk of fire and injury.



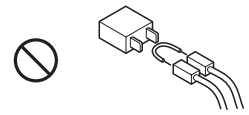
- Disabling fuse functions or bridging fuse terminals with wire, metal clips, solder or similar object.



- Disabling relay functions (such as wedging paper between relay contacts)

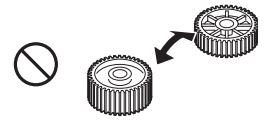


- Disabling safety functions (interlocks, safety circuits, etc.) Safety will not be assured, leading to a risk of fire and injury.



- Making any modification to the product unless instructed by KMBT

- Using parts not specified by KMBT



[2] POWER PLUG SELECTION

In some countries or areas, the power plug provided with the product may not fit wall outlet used in the area. In that case, it is obligation of customer engineer (hereafter called the CE) to attach appropriate power plug or power cord set in order to connect the product to the supply.

Power Cord Set or Power Plug

⚠ WARNING

- Use power supply cord set which meets the following criteria:
  - provided with a plug having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - provided with three-conductor cable having enough current capacity, and
  - the cord set meets regulatory requirements for the area.

  Use of inadequate cord set leads to fire or electric shock.



- Attach power plug which meets the following criteria:
  - having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - meets regulatory requirements for the area.

  Use of inadequate cord set leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.

- Conductors in the power cable must be connected to terminals of the plug according to the following order:
  - Black or Brown: L (line)
  - White or Light Blue: N (neutral)
  - Green/Yellow: PE (earth)

  Wrong connection may cancel safeguards within the product, and results in fire or electric shock.

[3] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

KONICA MINOLTA brand products are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer (hereafter called the CE) from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the CE must perform regular safety checks.

1. Power Supply

Connection to Power Supply

⚠ WARNING

- Check that mains voltage is as specified.
  Connection to wrong voltage supply may result in fire or electric shock.

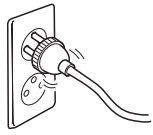
- Connect power plug directly into wall outlet having same configuration as the plug.
  Use of an adapter leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.
  If proper wall outlet is not available, advice the customer to contact qualified electrician for the installation.



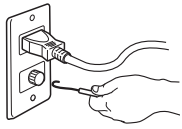
- Plug the power cord into the dedicated wall outlet with a capacity greater than the maximum power consumption.
  If excessive current flows in the wall outlet, fire may result.

- If two or more power cords can be plugged into the wall outlet, the total load must not exceed the rating of the wall outlet.
  If excessive current flows in the wall outlet, fire may result.

- Make sure the power cord is plugged in the wall outlet securely.
  Contact problems may lead to increased resistance, overheating, and the risk of fire.



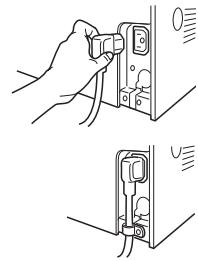
- Check whether the product is grounded properly.
  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.
  Connect power plug to grounded wall outlet.



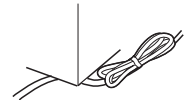
Power Plug and Cord

⚠ WARNING

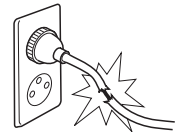
- When using the power cord set (inlet type) that came with this product, make sure the connector is securely inserted in the inlet of the product.
  When securing measure is provided, secure the cord with the fixture properly.
  If the power cord (inlet type) is not connected to the product securely, a contact problem may lead to increased resistance, overheating, and risk of fire.



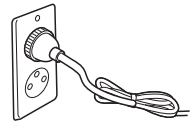
- Check whether the power cord is not stepped on or pinched by a table and so on.
  Overheating may occur there, leading to a risk of fire.



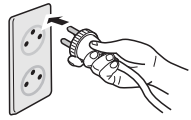
- Check whether the power cord is damaged. Check whether the sheath is damaged.
  If the power plug, cord, or sheath is damaged, replace with a new power cord (with plug and connector on each end) specified by KMBT. Using the damaged power cord may result in fire or electric shock.



- Do not bundle or tie the power cord.
  Overheating may occur there, leading to a risk of fire.

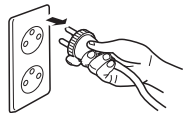


- Check whether dust is collected around the power plug and wall outlet.
  Using the power plug and wall outlet without removing dust may result in fire.



- Do not insert the power plug into the wall outlet with a wet hand.
  The risk of electric shock exists.

- When unplugging the power cord, grasp the plug, not the cable.
  The cable may be broken, leading to a risk of fire and electric shock.

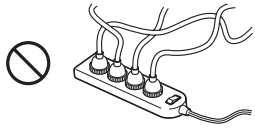


Wiring

⚠ WARNING

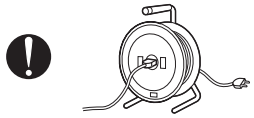
- Never use multi-plug adapters to plug multiple power cords in the same outlet.

  If used, the risk of fire exists.



- When an extension cord is required, use a specified one. Current that can flow in the extension cord is limited, so using a too long extension cord may result in fire.

  Do not use an extension cable reel with the cable taken up. Fire may result.



2. Installation Requirements

Prohibited Installation Places

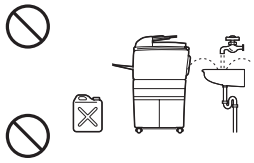
⚠ WARNING

- Do not place the product near flammable materials or volatile materials that may catch fire.

  A risk of fire exists.

- Do not place the product in a place exposed to water such as rain.

  A risk of fire and electric shock exists.

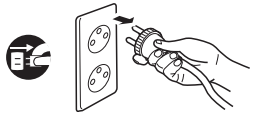


When not Using the Product for a long time

⚠ WARNING

- When the product is not used over an extended period of time (holidays, etc.), switch it off and unplug the power cord.

  Dust collected around the power plug and outlet may cause fire.



Ventilation

⚠ CAUTION

- The product generates ozone gas during operation, but it will not be harmful to the human body.

  If a bad smell of ozone is present in the following cases, ventilate the room.

  a. When the product is used in a poorly ventilated room
  b. When taking a lot of copies
  c. When using multiple products at the same time



Stability

⚠ CAUTION

- Be sure to lock the caster stoppers.

  In the case of an earthquake and so on, the product may slide, leading to a injury.

Inspection before Servicing

⚠ CAUTION

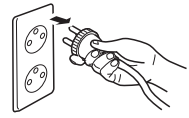
- Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure, using only the prescribed tools. Do not make any adjustment not described in the documentation.

  If the prescribed procedure or tool is not used, the product may break and a risk of injury or fire exists.



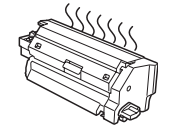
- Before conducting an inspection, be sure to disconnect the power plugs from the product and options.

  When the power plug is inserted in the wall outlet, some units are still powered even if the POWER switch is turned OFF. A risk of electric shock exists.



- The area around the fixing unit is hot.

  You may get burnt.

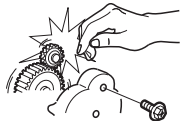


Work Performed with the Product Powered On

⚠ WARNING

- Take every care when making adjustments or performing an operation check with the product powered.

  If you make adjustments or perform an operation check with the external cover detached, you may touch live or high-voltage parts or you may be caught in moving gears or the timing belt, leading to a risk of injury.



- Take every care when servicing with the external cover detached.

  High-voltage exists around the drum unit. A risk of electric shock exists.

Safety Checkpoints

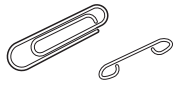
⚠ WARNING

- Check the exterior and frame for edges, burrs, and other damage.

  The user or CE may be injured.

- Do not allow any metal parts such as clips, staples, and screws to fall into the product.

  They can short internal circuits and cause electric shock or fire.



- Check wiring for squeezing and any other damage.

  Current can leak, leading to a risk of electric shock or fire.

- Carefully remove all toner remnants and dust from electrical parts and electrode units such as a charging corona unit.

  Current can leak, leading to a risk of product trouble or fire.

- Check high-voltage cables and sheaths for any damage.

  Current can leak, leading to a risk of electric shock or fire.



Safety Checkpoints

⚠ WARNING

- Check electrode units such as a charging corona unit for deterioration and sign of leakage.

  Current can leak, leading to a risk of trouble or fire.

- Before disassembling or adjusting the write unit (P/H unit) incorporating a laser, make sure that the power cord has been disconnected.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

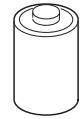


- Do not remove the cover of the write unit. Do not supply power with the write unit shifted from the specified mounting position.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

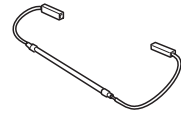
- When replacing a lithium battery, replace it with a new lithium battery specified in the Parts Guide Manual. Dispose of the used lithium battery using the method specified by local authority.

  Improper replacement can cause explosion.



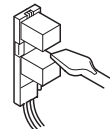
- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.

  A risk of fire exists.



- Check the interlock switch and actuator for loosening and check whether the interlock functions properly.

  If the interlock does not function, you may receive an electric shock or be injured when you insert your hand in the product (e.g., for clearing paper jam).



- Make sure the wiring cannot come into contact with sharp edges, burrs, or other pointed parts.

  Current can leak, leading to a risk of electric shock or fire.



Safety Checkpoints

⚠ WARNING

- Make sure that all screws, components, wiring, connectors, etc. that were removed for safety check and maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)

  A risk of product trouble, electric shock, and fire exists.



Handling of Consumables

⚠ WARNING

- Toner and developer are not harmful substances, but care must be taken not to breathe excessive amounts or let the substances come into contact with eyes, etc. It may be stimulative.

  If the substances get in the eye, rinse with plenty of water immediately. When symptoms are noticeable, consult a physician.



- Never throw the used cartridge and toner into fire.

  You may be burned due to dust explosion.

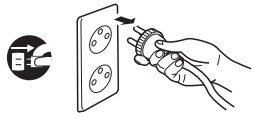


Handling of Service Materials

⚠ CAUTION

- Unplug the power cord from the wall outlet.

  Drum cleaner (isopropyl alcohol) and roller cleaner (acetone-based) are highly flammable and must be handled with care. A risk of fire exists.



- Do not replace the cover or turn the product ON before any solvent remnants on the cleaned parts have fully evaporated.

  A risk of fire exists.



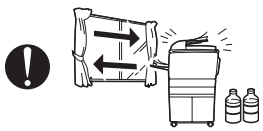
Handling of Service Materials

⚠ CAUTION

- Use only a small amount of cleaner at a time and take care not to spill any liquid. If this happens, immediately wipe it off.
  A risk of fire exists.



- When using any solvent, ventilate the room well.
  Breathing large quantities of organic solvents can lead to discomfort.



[4] Laser Safety

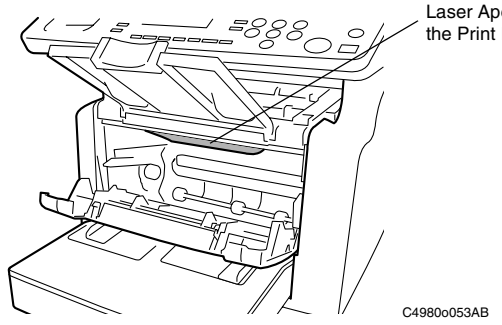
- This is a digital machine certified as a Class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

4.1 Internal Laser Radiation

semiconductor laser	
Maximum power of the laser diode	15 mW
Maximum average radiation power (*)	36.903 µW
Wavelength	770-800 nm

*at laser aperture of the Print Head Unit

- This product employs a Class 3b laser diode that emits an invisible laser beam. The laser diode and the scanning polygon mirror are incorporated in the print head unit.
- The print head unit is NOT A FIELD SERVICEABLE ITEM. Therefore, the print head unit should not be opened under any circumstances.



[5] Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.
Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Finland, Sweden

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

U.S.A., Canada
(CDRH Regulation)

- This machine is certified as a Class 1 Laser product under Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

- The label shown on page S-16 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

CAUTION
- **Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

semiconductor laser	
Maximum power of the laser diode	15 mW
Wavelength	770-800 nm

All Areas

CAUTION
- **Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

semiconductor laser	
Maximum power of the laser diode	15 mW
Wavelength	770-800 nm

Denmark

ADVARSEL
- **Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. Klasse 1 laser produkt der opfylder IEC60825-1 sikkerheds kravene.**

halvlederlaser	
Laserdiodens højeste styrke	15 mW
bølgelængden	770-800 nm

Finland, Sweden

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

VAROITUS!
- **Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.**

puolijohdelaser	
Laserdiodin suurin teho	15 mW
aallonpituus	770-800 nm

VARNING!
- **Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.**

halvledarlaser	
Den maximala effekten för laserdioden	15 mW
våglängden	770-800 nm

VARO!
- **Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättomälle lasersäteilylle. Älä katso säteeseen.**

VARNING!
- **Osynlig laserstråining när denna del är öppnad och spärren är urkopplad. Betrakta ej stråien.**

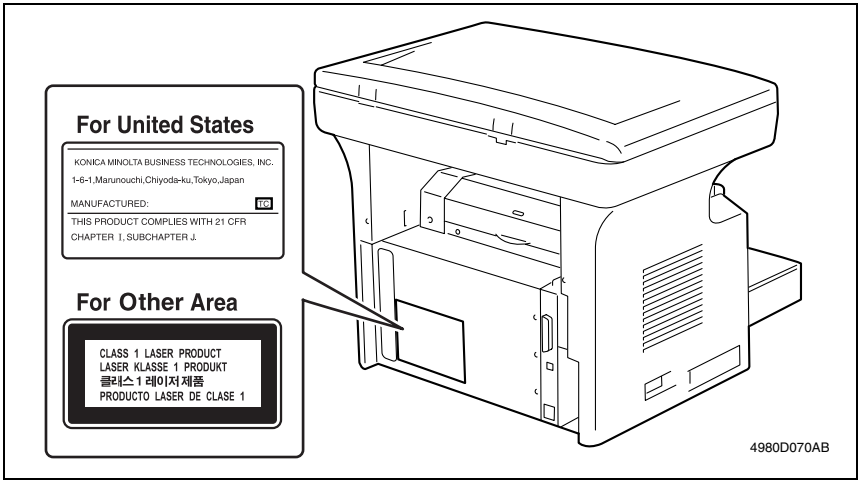
Norway

ADVERSEL
- **Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.**

halvleder laser	
Maksimal effekt till laserdiode	15 mW
bølgelengde	770-800 nm

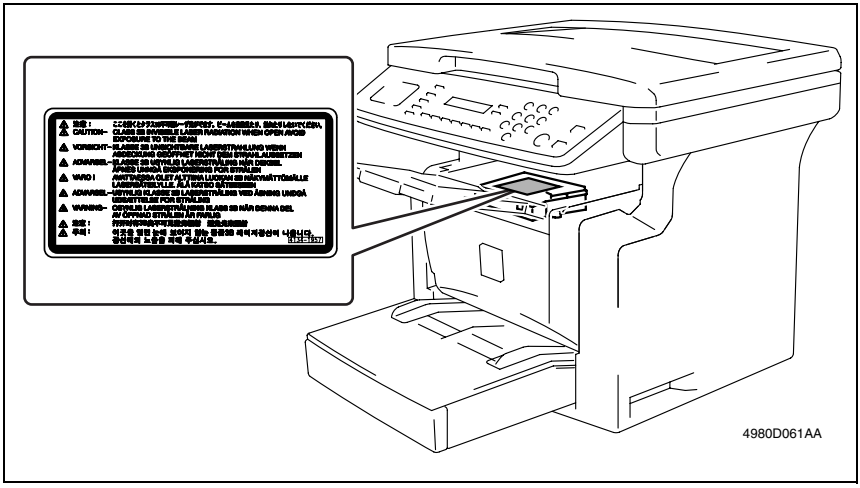
5.1 Laser Safety Label

- A laser safety label is attached to the inside of the machine as shown below.



5.2 Laser Caution Label

- A laser caution label is attached to the outside of the machine as shown below.



5.3 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the printer OFF.
- If the job requires that the printer be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The Print Head is not to be disassembled or adjusted in the field. Replace the Unit or Assembly including the Control Board. Therefore, remove the Laser Diode, and do not perform Control Board trimmer adjustment.

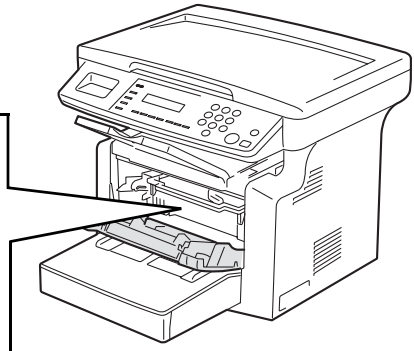
WARNING INDICATIONS ON THE MACHINE

Caution labels shown are attached in some areas on/in the machine.
When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and electric shock.

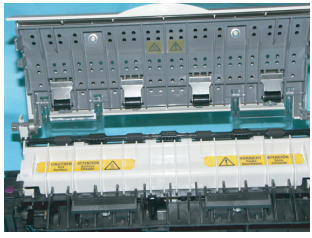


4980p0c003aa

Do not throw into a fire

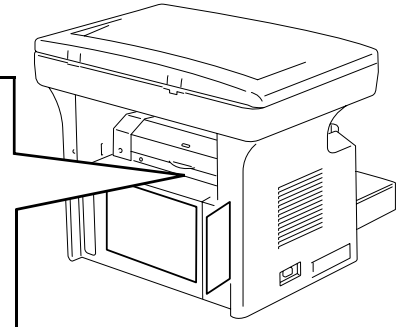


4980p0c001aa



4980p0c002aa

High temperature



⚠ CAUTION:

- **You may be burned or injured if you touch any area that you are advised not to touch by any caution label. Do not remove caution labels. If any caution label has come off or become dirty and therefore the caution cannot be read, contact our Service Office.**

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

bizhub 160/160f
bizhub 161/161f
Main Unit

Confidential – for internal use only, do not distribute

2005.04
KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

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After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, show △1 to the left of the revised section.
  A number within △1 represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲1 in the lower outside section of the corresponding page.
  A number within ▲1 represents the number of times the revision has been made.

NOTE

Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.

- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

2005/04	1.0	—	Issue of the first edition
Date	Service manual Ver.	Revision mark	Descriptions of revision

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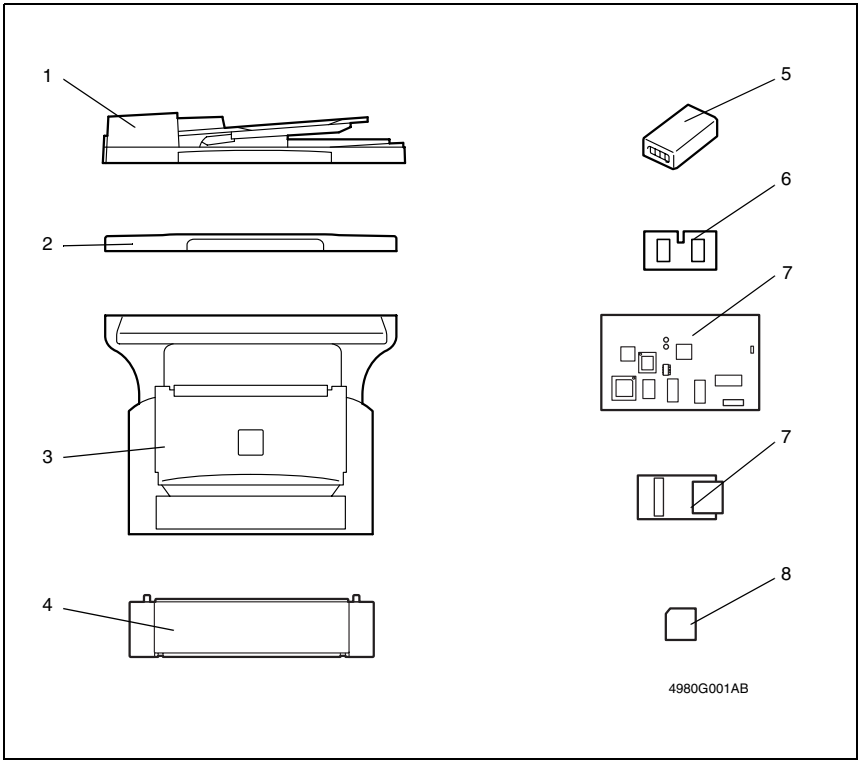
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General

1. System configuration



[1] Automatic Document Feeder DF-501

[2] Original Cover OC-503

[3] Main Unit
bizhub 160, bizhub 160f,
bizhub 161, bizhub 161f

[4] Paper Feed Cassette PF-501

[5] Mechanical Counter MC-502

[6] Expansion memory (32 MB) EM-101

[7] NIC NC-501
- Plate NIC Board

[8] Internet Fax & Network Scan kit SU-502

2. Product specifications

2.1 bizhub 160 / bizhub 161

2.1.1 Main Unit

Type	Desktop
Original scanning system	Scanning in main scanning direction with a 3-line color CCD sensor, and scanning in sub-scanning direction with unit scanning and sheet feed-through system
Photo conductor type	OPC (Organic Photo conductor)
Copying system	Electrostatic dry Powdered image transfer to plain paper with laser
Resolution	Scan: 600 dpi × 600 dpi Write: 600 dpi × 600 dpi
Paper feed-in system	2-Way system (Tray1 and Bypass Tray) *3-Way system is possible if optional PF-501 (Tray2) is installed.
Exposure system	Unit scanning slit exposure
Developing system	FMT (Fine Micro Toning) single component developing
Drum-charging system	Rotating brush with pre-charge film
Image transfer system	Roller transfer
Paper separation system	Curvature separation + Charge Neutralizing needle
Fusing system	Heat roller
Max. Original size	Up to A4 or 8.5 × 14 (Legal)
Memory Capacity	STD: 16 MB *48 MB Maximum with 32 MB Option Memory (EM-101)

Copy Medium

<table>
<tr><td colspan="2">Paper source</td><td>Tray1</td><td>Bypass Tray</td><td>Tray2</td></tr>
<tr><td rowspan="6">Type</td><td>Plain paper
(60 to 90 g/m^2, 16 to 24 lb)</td><td rowspan="6" colspan="2">A4, A5, B5,
8.5 × 14 (Legal),
8.5 × 11 (Letter),
5.5 × 8.5 (Half Letter),
FLS, 16K
Custom size:
Max. 216 × 356 μμ
Min. 105 × 148 μμ</td><td>A4,
8.5 × 11 (Letter)</td></tr>
<tr><td>Recycled paper
(60 to 90 g/m^2, 16 to 24 lb)</td></tr>
<tr><td>Special paper
(91 to 163 g/m^2, 24 to 43 lb)</td><td>–</td></tr>
<tr><td>Transparencies</td><td>–</td></tr>
<tr><td>Label sheets</td><td>–</td></tr>
<tr><td>Envelopes</td><td>–</td></tr>
</table>

NOTE
The dimension for Tray2 is fixed at A4 or Letter.

Continuous copy speed (copies/min.)	12 copies/minute (at full size and 600 dpi × 300 dpi, with ADF)
Continuous print speed (sheets/min.)	More than 16 sheets/minute (with plain A4R or Letter R paper)
Warm-up time	Less than 25 seconds (at a room temperature of 23 °C and at the rated voltage)
First print time	16 seconds or less (at full size and 600 dpi × 300 dpi, with plain A4R or Letter R paper)
First copy time	13 seconds or less (at full size and 600 dpi × 300 dpi, with plain A4R or Letter R paper) *If the Start key is pressed more than 3 seconds after opening and closing the Original Cover or Auto Document Feeder after the engine has warmed up.

Zoom Ratios

		Metric Size	Inch Size
Fixed	Full size	×1.00	×1.00
	Enlargement	×1.15 ×1.41 ×2.00 ×4.00	×1.29 ×1.54 ×2.00 ×4.00
	Reduction	×0.81 ×0.70 ×0.50 ×0.25	×0.78 ×0.64 ×0.50 ×0.25
Variable	×0.25 to ×4.00 (in ×0.01 increments)		

Lens	Through lens (F=5.0, f=27.195)
Exposure Lamp	Cold Cathode Florescent Lamp
Fusing temperature	200 °C

Power /Current Consumption (main unit only)

Voltage	Maximum power consumption
110 V, 120-127 V	720, 820-880 W
220-240 V	740-850 W

Power source	110 V, 120V-127 V, 220-240 V 50/60 Hz
Main unit dimensions (including Original Cover)	Width....508 mm (20 inch) Depth....608 mm (24 inch) Height....408 mm (16 inch)
Main unit weight	14.9 kg (32.75 lb)

2.1.2 GDI Printer Function (bizhub 160 only)

RAM	Share with copier.
Interfaces	IEEE 1284 (Parallel), USB Revision 1.1 (except for Windows NT)
Printer Language	GDI
Fonts	Windows
Supported Operating Systems	Windows XP (SP2 or later), Windows server 2003, Windows 2000 (SP4 or later), Windows NT Workstation Version 4.0 (SP6a or later), Windows Me, Windows 98 (SP1), Windows 98 Second Edition
Web Browser	Internet Explorer 4.0 or later, Netscape navigator 4.0 or later

2.1.3 PCL Printer Function (bizhub 161 only)

Memory capacity	32MB (on board for image processing).
	16MB (on board for file system, input buffer).
	64MB/ 128MB (optional, standard DIMM for file system. PC133 is recommended)
Interfaces	IEEE 1284 (Parallel), USB Revision 1.1 (except for Windows NT)
Printer Language	PJL, PCL5e, PCL-XL 2.1 PCL6 printer controller switches the PDL by PJL command.
Download Fonts	PCL6 printer controller supports two kinds of download font format. Bitmap font format/ True type font format
Resident Font & Symbol Set	8 bitmap font (Standard), 45 scale font (Standard) Symbol Set List (Total 36) ISO 8859-1 Latin1/ ISO 8859-2 Latin2/ ISO 8559-9 Latin5/ISO 4/ ISO 6/ ISO 11/ ISO 15/ ISO 17/ ISO 21/ ISO 60/ ISO 69/ PC-8/ PC Turkish / PC-8 Danish/ Norwegian/ PC-850 /PC-852 / PC-856 (PC-Cyrillic)/ Ventura International/ Ventura US/ Ventura Math/ Windows 3.0 Latin 1 80H/ Windows 3.1 Latin 1 80H/ Windows 3.1 Latin 2 80H/ Windows 3.1 Latin 5 80H/ Windows 3.1 Baltic 80H/ PS Text/ PS Math/ PI Font/ Roman-8/ Desktop/ Microsoft Publishing/ Math-8/ MC Text ODBH/ Legal/ Symbol/ Wingdings Typeface List (Total 53) Courier/ CG Times/ CG Times Bold/ CG Times Italic/ CG Times Bold Italic/ CG Omega/ CG Omega Bold/ CG Omega Italic/ CG Omega Bold Italic/ Coronet/ Clarendon Condensed/ Univers Medium/ Univers Bold/ Univers Medium Italic/ Univers Bold Italic/ Univers Medium Condensed/ Univers Bold Condensed/ Univers Medium Condensed Italic/ Univers Bold Condensed Italic/ Antique Olive/ Antique Olive Bold/ Antique Olive Italic/ Garamond Antiqua/ Garamond Halbfett/ Garamond Kursiv/ Garamond Kursiv Halbfelt/ Marigold/ Albertus Medium/ Abertus Extra Bold/ Arial/ Arial Bold/ Arial Italic/ Arial Bold Italic/ Times New/ Times New Bold/ Times New Italic/ Times New Bold Italic/ Symbol/ Wingdings/ Courier Bold/ Courier Italic/ Courier Bold Italic/ Letter Gothic/
Resident Font & Symbol Set	Letter Gothic Bold/ Letter Gothic Italic/ Line Printer (ISO 8859-1 Latin1)/ Line Printer (Leagal)/ Line Printer (Roman-8)/ Line Printer (PC-8 Danish/ Norwegian)/ Line Printer (PC-850)/ Line Printer (ISO 8859-2 Latin 2)/ Line Printer (ISO 8859-9 Latin5)/ Line Printer (PC-8)
Supported Operating Systems	Windows XP, Windows server 2003, Windows 2000, Windows NT4.0 (SP6a or later: USB not supported), Windows Me, Windows 98 Second Edition

2.2 bizhub 160f / bizhub 161f

2.2.1 Main Unit

Type	Desktop
Original scanning system	Scanning in main scanning direction with a 3-line color CCD sensor, and scanning in sub-scanning direction with unit scanning and sheet feed-through system
Photo conductor type	OPC (Organic Photo conductor)
Copying system	Electrostatic dry Powdered image transfer to plain paper with laser
Resolution	Scan: 600 dpi × 600 dpi Write: 600 dpi × 600 dpi
Paper feed-in system	2-Way system (Tray1 and Bypass Tray) *3-Way system is possible if optional PF-501 (Tray2) is installed.
Exposure system	Unit scanning slit exposure
Developing system	FMT (Fine Micro Toning) single component developing
Drum-charging system	Rotating brush with pre-charge film
Image transfer system	Roller transfer
Paper separation system	Curvature separation + Charge Neutralizing needle
Fusing system	Heat roller
Max. Original size	Up to A4 or 8.5 × 14 (Legal)
Memory Capacity	STD: 16 MB (48 MB Maximum with 32 MB Option Memory)

Copy Medium

Paper source		Tray1	Bypass Tray	Tray2
Type	Plain paper (60 to 90 g/m^2, 16 to 24 lb)	A4, A5, B5, 8.5 × 14 (Legal), 8.5 × 11 (Letter), 5.5 × 8.5 (Half Letter), FLS, 16K Custom size: Max. 216 × 356 μμ Min. 105 × 148 μμ		A4, 8.5 × 11 (Letter)
	Recycled paper (60 to 90 g/m^2, 16 to 24 lb)			
	Special paper (91 to 163 g/m^2, 24 to 43 lb)			–
	Transparencies			–
	Label sheets			–
	Envelopes			–

NOTE
The dimension for Tray2 is fixed at A4 or Letter.

Continuous copy speed (copies/min.)	12 copies/minute (at full size and 600 dpi × 300 dpi)
Continuous print speed (sheets/min.)	More than 16 sheets/minute (with plain A4R or Letter R paper)
Warm-up time	Less than 25 seconds (at a room temperature of 23 °C and at the rated voltage)
First print time	16 seconds or less (at full size and 600 dpi × 300 dpi, with plain A4R or Letter R paper)
First copy time	13 seconds or less (at full size and 600 dpi × 300 dpi, with plain A4R or Letter R paper) *If the Start key is pressed more than 3 seconds after opening and closing the Original Cover or Auto Document Feeder after the engine has warmed up.

Zoom Ratios

		Metric Size	Inch Size
Fixed	Full size	×1.00	×1.00
	Enlargement	×1.15 ×1.41 ×2.00 ×4.00	×1.29 ×1.54 ×2.00 ×4.00
	Reduction	×0.81 ×0.70 ×0.50 ×0.25	×0.78 ×0.64 ×0.50 ×0.25
Variable	×0.25 to ×4.00 (in ×0.01 increments)		

Lens	Through lens (F=5.0, f=27.195)
Exposure Lamp	Cold Cathode Florescent Lamp
Fusing temperature	200 °C

Power /Current Consumption (main unit only)

Voltage	Maximum power consumption
110 V, 120-127 V	700, 770-880 W
220-240 V	740-830 W

Power source	110 V, 120V-127 V, 220-240 V 50/60 Hz
Dimensions (including Automatic Document Feeder)	Width....508 mm (20 inch) Depth....608 mm (24 inch) Height....468 mm (16 inch)
Weight (including Automatic Document Feeder)	17.3 kg (38.25 lb)

2.2.2 GDI Printer Function (bizhub 160f only)

RAM	Share with copier.
Interfaces	IEEE 1284 (Parallel), USB Revision 1.1 (except for Windows NT)
Printer Language	GDI
Fonts	Windows
Supported Operating Systems	Windows XP (SP2 or later), Windows server 2003, Windows 2000 (SP4 or later), Windows NT Workstation Version 4.0 (SP6a or later), Windows Me, Windows 98 (SP1), Windows 98 Second Edition
Web Browser	Internet Explorer 4.0 or later, Netscape navigator 4.0 or later

2.2.3 PCL Printer Function (bizhub 161f only)

Memory capacity	32MB (on board for image processing).
	16MB (on board for file system, input buffer).
	64MB/ 128MB (optional, standard DIMM for file system. PC133 is recommended)
Interfaces	IEEE 1284 (Parallel), USB Revision 1.1 (except for Windows NT)
Printer Language	PJL, PCL5e, PCL-XL 2.1 PCL6 printer controller switches the PDL by PJL command.
Download Fonts	PCL6 printer controller supports two kinds of download font format. Bitmap font format/ True type font format
Resident Font & Symbol Set	Symbol Set List (Total 36) ISO 8859-1 Latin1/ ISO 8859-2 Latin2/ ISO 8559-9 Latin5/ISO 4/ ISO 6/ ISO 11/ ISO 15/ ISO 17/ ISO 21/ ISO 60/ ISO 69/ PC-8/ PC Turkish / PC-8 Danish/ Norwegian/ PC-850 /PC-852 / PC-856 (PC-Cyrillic)/ Ventura International/ Ventura US/ Ventura Math/ Windows 3.0 Latin 1 80H/ Windows 3.1 Latin 1 80H/ Windows 3.1 Latin 2 80H/ Windows 3.1 Latin 5 80H/ Windows 3.1 Baltic 80H/ PS Text/ PS Math/ PI Font/ Roman-8/ Desktop/ Microsoft Publishing/ Math-8/ MC Text ODBH/ Legal/ Symbol/ Wingdings Typeface List (Total 53) Courier/ CG Times/ CG Times Bold/ CG Times Italic/ CG Times Bold Italic/ CG Omega/ CG Omega Bold/ CG Omega Italic/ CG Omega Bold Italic/ Coronet/ Clarendon Condensed/ Univers Medium/ Univers Bold/ Univers Medium Italic/ Univers Bold Italic/ Univers Medium Condensed/ Univers Bold Condensed/ Univers Medium Condensed Italic/ Univers Bold Condensed Italic/ Antique Olive/ Antique Olive Bold/ Antique Olive Italic/ Garamond Antiqua/ Garamond Halbfett/ Garamond Kursiv/ Garamond Kursiv Halbfelt/ Marigold/ Albertus Medium/ Abertus Extra Bold/ Arial/ Arial Bold/ Arial Italic/ Arial Bold Italic/ Times New/ Times New Bold/ Times New Italic/ Times New Bold Italic/ Symbol/ Wingdings/ Courier Bold/ Courier Italic/ Courier Bold Italic/ Letter Gothic/
Resident Font & Symbol Set	Letter Gothic Bold/ Letter Gothic Italic/ Line Printer (ISO 8859-1 Latin1)/ Line Printer (Leagal)/ Line Printer (Roman-8)/ Line Printer (PC-8 Danish/ Norwegian)/ Line Printer (PC-850)/ Line Printer (ISO 8859-2 Latin 2)/ Line Printer (ISO 8859-9 Latin5)/ Line Printer (PC-8)
Supported Operating Systems	Windows XP, Windows server 2003, Windows 2000, Windows NT4.0 (SP6a or later: USB not supported), Windows Me, Windows 98 Second Edition

2.2.4 FAX Function

General	
Compatibility	Super G3/ G3/ ECM (Error correction mode)
Scanning Resolution	STD: CD 8 lines/mm x FD 3.85 lines/mm Fine: CD 8 lines/mm x FD 7.7 lines/mm Super Fine: CD 8 lines/mm x FD 15.4 lines/mm
Line	PSTN/ PBX
Data Transmission Rate	33.6 kbps (V.34 JBIG)
Coding Method	MH/ MR/ MMR/ JBIG
Scanning Area	Scanning on the original glass - Metric: A5, A4 - Inch: 5.5 × 8.5 (Half Letter), 8.5 × 11 (Letter), 8.5 × 14 (Legal) Sheet through scanning - CD direction: Maximum 215 mm (8.5 inch) - FD direction: Maximum 1,000 mm (39 inch)
Internet fax	Enable when the optional Internet Fax & Network Scan Kit SU-502 is installed.
Dialing	
Direct dialing	Entering the fax number directly using the 10-Key Pad.
One touch dial	15 keys
Speed dial	200 fax numbers
Group dial	15 groups (50 destination/group)
Program dial	4 keys (No. 12, 13, 14, 15)
Other dialing	Pause insert, Phone Book dial, On-hook dial, Automatic redial, Redial, Chain dial, Combination dial
Transmission	
Transmission mode	ADF TX, Memory TX, Batch TX, Broadcast TX, Confidential Mailbox TX, F code TX (SubAddress TX, SID TX), Forward TX Manual TX, Polling TX, Quick Memory TX, Book TX, Relay initiate TX, Reservation TX, Timer TX,
TX resolution mode/ TX image mode	Standard (204 dpi x 98 dpi), Fine (204 dpi x 196 dpi), Super fine (204 dpi x 392 dpi), Standard + halftone (204 dpi x 98 dpi), Fine + halftone (204 dpi x 196 dpi), Super fine + halftone (204 dpi x 392 dpi)
Receiving	
Receiving mode	Auto RX, Closed network RX, Confidential Mailbox RX, Inward Polling RX, Manual RX, Memory RX, Substitute RX,
RX resolution	204 dpi x 98 dpi, 204 dpi x 196 dpi, 204 dpi x 392 dpi
Max. recording paper size	A4 or 8.5 × 14 (Legal)
Report	Activity report, Back up RAM error report, G3 protocol monitor report, Memory image print, Power failure report, Reservation report, RX result report, Service report, TX result report,
List	Key setting list, Machine status list, Memory data list, One-touch dial list, Service data list, Speed dial list,

Other Features	Automatic paper selection, Backup of memory, Confirmation of communication result, Daylight saving time, Date/Time setting, Display of destination station, Footer, Header, Package reception printing, Pause insert, Quick memory printing, Remote monitor, RX print cancel, RX printing mode (100 %reception/ Reception print mode/ Cut mode), Separate print, Smoothing, Speaker, Time zone, Tone signal transmission, TX cancel, RX cancel

Blank page

Maintenance

3. Periodical check

3.1 Maintenance Items

3.1.1 Parts to be Replaced by Users (CRU)

No.	Class	Parts to be replaced	Cycle	Clean	Replace	Descriptions
1	Processing sections	Toner cartridge	4,300		●	*1
2		Drum Cartridge	16,000		●	*1

*1: Average number of print during intermittent printing (2 pages/job)

3.1.2 Periodical Parts Replacement (Every 50,000 Print)

No.	Class	Parts to be replaced	Number of personnel	Check	Clean	Replace	Lubri-cation	Descrip-tions
1	Overall	Paper take-up and image conditions		●				
2		Appearance		●	●			
3	Paper feed section	Feed roller		●	●			
4	Transport section	Image Transfer Roller	1			●		
5	Fusing section	Fusing Unit	1			●		
6	DF-501	Paper Separator Pad	1			●		

3.2 Maintenance Parts

- To ensure that the machine produces good copies and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.
- Replace with reference to the numeric values displayed on the PM counter.

A. Main Unit

No.	Classification	Parts name	Quantity	Actual durable cycle	Pats No.	Descriptions	Ref.Page in this manual
1	Image Transfer section	Image Transfer Roller	1	50,000	4136-4103-XX		☞ 16
2	Fusing section	Fusing Unit (100V)	1	50,000	4137-0751-XX		☞ 19
		Fusing Unit (200V)			4137-0752-XX		
3	Processing section	Toner Cartridge	1	4,300	(materials)		☞ 17
4		Drum Cartridge	1	16,000	(materials)		☞ 18

B. Option

No.	Classification	Parts name	Quantity	Actual durable cycle	Pats No.	Descriptions	Ref.Page in this manual
1	DF-501	Separation Pad	1	50,000	4980-1075-XX		DF-501 manual

NOTE

- **As a rule, the Drum Cartridge and Toner Cartridge are to be replaced by the user.**
- **The contents of the Maintenance List are subject to change without notice.**
- **For the part numbers, see Parts Manual and Parts Modification Notice.**

3.3 Concept of parts life

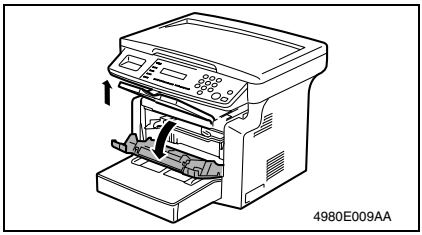
A. Conditions for Life Specifications Values

- The life specifications value represents the number of printed pages produced or figures equivalent to it when given conditions (see the Table given below) are met. It can be more or less depending on how each individual printer is used.

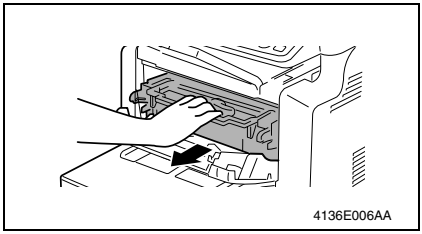
Print Conditions	
Job type	Making 2 copies per job
Paper size	A4R / Letter R
B/W ratio	B/W 6 %

3.4 Maintenance procedure (Periodical check parts)

3.4.1 Remove the Imaging Cartridge



1. Lift up the Exit Tray and remove it.
2. Open the Front Door.

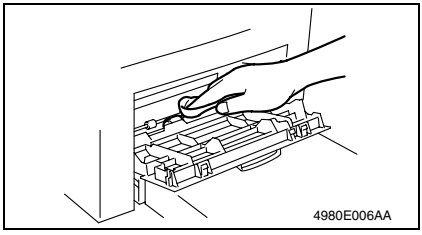


3. Remove the Imaging Cartridge.

NOTE

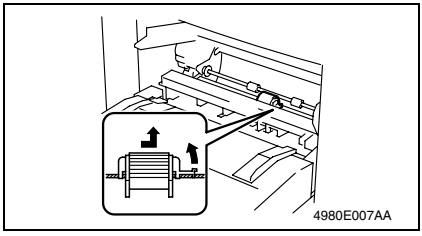
- **The Imaging Cartridge is the Drum Cartridge, to which the Toner Cartridge is mounted.**

3.4.2 Feed Roller



A. Cleaning

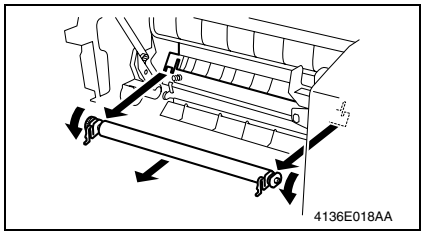
1. Remove the Imaging Cartridge.
2. Using a soft cloth, wipe the surface of the Feed Roller clean of dirt.



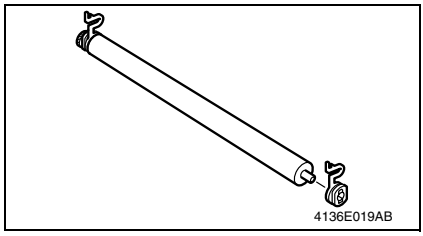
B. Replacement

1. Remove the Imaging Cartridge.
2. Remove the Feed Roller.

3.4.3 Replacement of the Image Transfer Roller



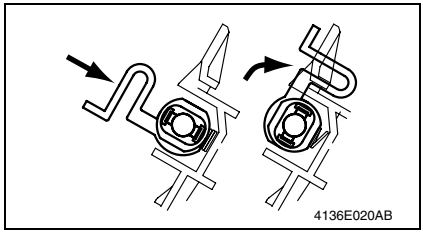
1. Remove the Imaging Cartridge.
2. Place the levers of the Bearings (white) on the right and left ends of the Image Transfer Roller toward this side and remove the Image Transfer Roller from the Image Transfer Roller holder.



3. Pull out the Bearings on the right and left ends, and the gear, from the Image Transfer Roller removed from its holder. Install the Bearings and the gear to the new Image Transfer Roller.

NOTE

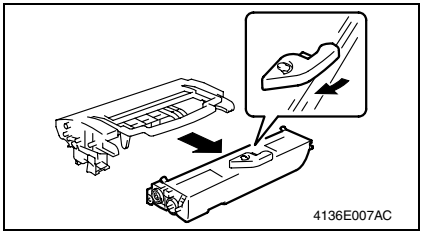
- **Do not touch, or dirty with chemicals or toner, the surface of the Image Transfer Roller, as indentations in and dirt on the surface of the Image Transfer Roller adversely affect the quality of the printed image.**
- **When handling the Image Transfer Roller, hold onto the shaft and Bearings of the roller.**
- **Do not place a new Image Transfer Roller directly on the floor or other surface.**



4. Insert the new Image Transfer Roller into the Image Transfer Roller holder and place the levers of the Bearings into the original upward positions.

3.5 Replacing the Unit

3.5.1 Replacement of the Toner Cartridge



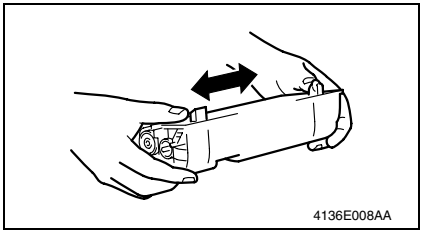
A. Removal Procedure

1. Remove the Imaging Cartridge.

2. Pull the lever of the Toner Cartridge in the direction shown in the illustration and disconnect the Toner Cartridge from the Drum Cartridge.

NOTE

- **If the Drum Cartridge is to be placed on a floor or similar place, use care to prevent toner from scattering around.**

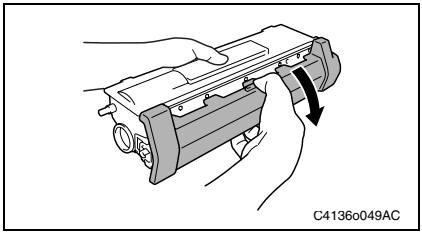


B. Reinstallation Procedure

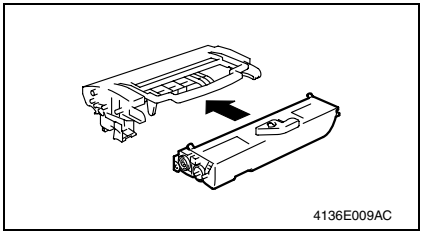
1. Take out a new Toner Cartridge and shake it in the horizontal direction sufficiently so that toner is agitated.

NOTE

- **Placing the Toner Cartridge in an upright position or shaking it vigorously will spill toner.**



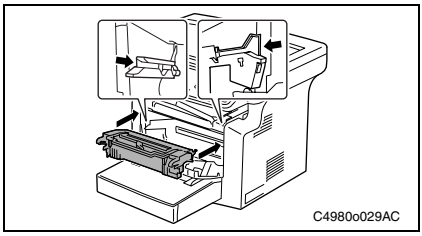
2. Remove the protective cover from the Toner Cartridge.



3. Install the new Toner Cartridge to the Drum Cartridge.

NOTE

- **Insert the Toner Cartridge along the guide provided on the Drum Cartridge side and make sure that the Toner Cartridge is not tilted when inserted.**



4. Install the Imaging Cartridge in the printer.

NOTE

- **Insert the Imaging Cartridge along the guide provided on the printer side. Ensure that the Imaging Cartridge is not slid obliquely.**

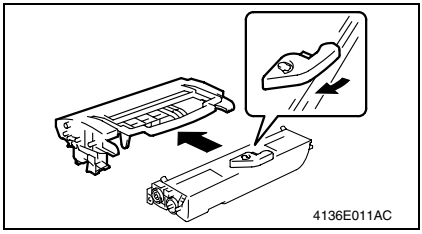
5. Close the Front Door.

Precautions for Replacing the Toner Cartridge

- **Different types of Toner Cartridges are available for different regions. Therefore, check the Toner Cartridge type before replacing it.**

<Toner Cartridge Types for Each Region>
USA & Canada : Toner Cartridge 605 C
Europe : Toner Cartridge 601 A
Other regions : Toner Cartridge 602 B

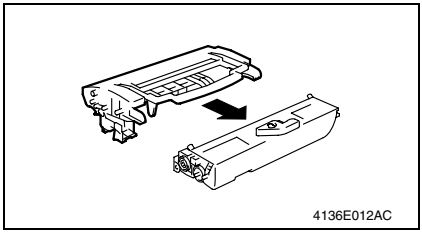
3.5.2 Replacement of the Drum Cartridge



A. Removal Procedure

1. Remove the Imaging Cartridge.

2. Pull the lever of the Toner Cartridge in the direction shown in the illustration and disconnect the Drum Cartridge.

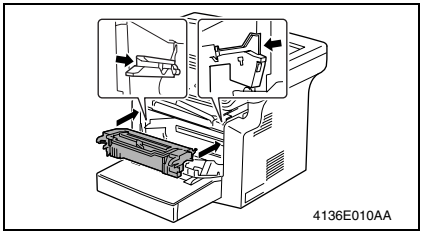


B. Reinstallation Procedure

1. Mount the Toner Cartridge to a new Drum Cartridge.

NOTE

- **Insert the Toner Cartridge along the guide provided on the new Drum Cartridge side and make sure that the Toner Cartridge is not tilted when inserted.**



2. Install the Imaging Cartridge in the printer.

NOTE

- **Insert the Imaging Cartridge along the guide provided on the printer side. Ensure that the Imaging Cartridge is not slid obliquely.**

3. Close the Front Door.

NOTE

- **After replacing the Drum Cartridge, be sure to reset the I/C counter in the Service Mode.**

3.5.3 Replacement of the Fusing Unit

NOTE

- **Immediately after turning off the printer, the area around the Fusing Unit is extremely hot. Therefore, in order to reduce the risk of burns, wait until the unit has cooled down before performing any operation.**

A. Removal Procedure

1. Remove the Rear Cover.

☞ 32

2. Remove the NIC Board. (only when the option NC-501 is mounted)

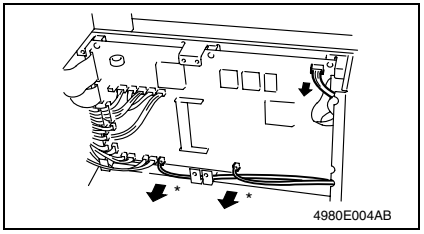
☞ 34

3. Remove the NCU Board. (bizhub 160f/161f only)

☞ 34

4. Remove the PCL Board. (bizhub 161/161f only)

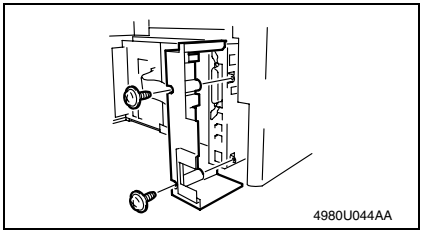
☞ 35



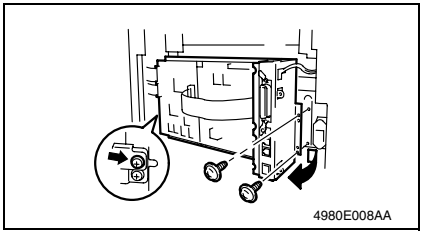
5. Unplug all connector on the Controller/Mechanical Control Board.

NOTE

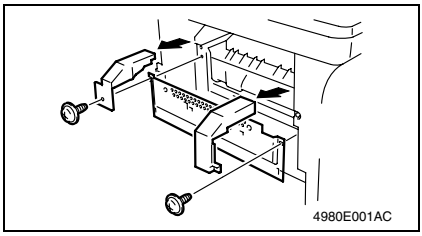
- **The two connectors marked with "*" in the illustration are provided for bizhub 160f/161f only.**



6. Remove the two screws, and then remove the Left Rear Cover.



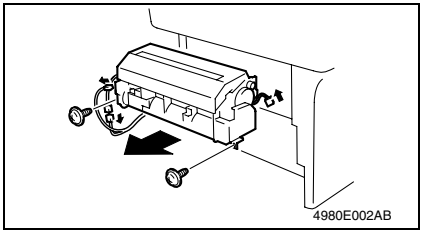
7. Remove the three screws, and then remove the Circuit Board and Metal Bracket.



8. Remove the Upper Left Cover.
9. Remove the two screws, and then remove the Upper Right Cover and Protective Metal Bracket.

NOTE

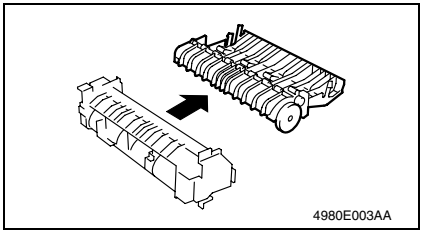
- **The Protective Metal Bracket is tightened together with the Upper Right Cover.**



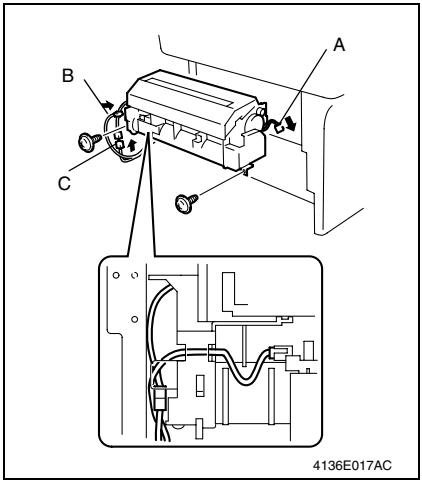
10. Remove two screws, unplug three connectors, and remove the Fusing Unit.

NOTE

- **The surfaces around the Fusing Unit are very hot. Use utmost care not to touch any surfaces other than the Fusing Unit.**



11. Remove the Fusing Unit.



B. Reinstallation Procedure

1. Connect connector A.
2. Mount the Fusing Unit in the printer and secure it in position by tightening the two screws.
3. Connect connectors B and C.

NOTE

- **When installing the Fusing Unit, route the harness as shown in the illustration and make sure that no part of the harness is wedged between the Fusing Unit and printer.**

4. Service tool

4.1 CE Tool List

- There is not use for the CE tool.

4.2 Copy materials

Parts name	Replacing period *1
Toner Cartridge	4,300 copies
Drum Cartridge	16,000 copies

*1: Life value that can be achieved with a probability of 90% even with product-to-product variations and fluctuating operating environmental conditions taken into consideration, when the T/C is used under the conditions of B/W ratio 6%.

4.2.1 Maintenance Kit

There is no setting for the Maintenance Kit.

5. Firmware upgrade

5.1 Preparations for Firmware rewriting

NOTE

- **The TWAIN driver must already be installed on the host computer to be used for updating the firmware.**
- **If the printer driver or TWAIN driver is not installed, follow the procedure described below to install the driver.**
- **If the driver is already installed, skip to "Procedure for Updating the Firmware" and update the firmware.**

5.2 Firmware rewriting

5.2.1 Installing the Printer Driver/ TWAIN Driver Using Plug and Play

<For Windows XP>

1. Start up the host computer, and then insert the CD-ROM into the CD-ROM drive.
2. Turn on the printer.
3. Use a USB cable to connect the printer to the host computer.
4. In the "Found New Hardware Wizard" dialog box, select "Install from a list or specific location [Advanced]", and then click the [Next] button.
5. Below "Search for the best driver in these locations.", select "Include this location in the search", and then click the [Browse] button.
6. Specify "\Corresponding_language\2K_XP" on the CD-ROM, and then click the [OK] button.
7. Click the [Next] button, and then click the [Finish] button.
8. When the "Found New Hardware Wizard" dialog box appears again, repeat steps 4 through 7 to install all drivers.

<For Windows 2000>

1. Start up the host computer, and then insert the CD-ROM into the CD-ROM drive.
2. Turn on the printer.
3. Use a USB cable to connect the printer to the host computer.
4. In the "Install Hardware Device Drivers" dialog box, select "Search for a suitable driver for my device (recommended)", and then click the [Next] button.
5. In the "Locate Driver Files" dialog box, select "Specify a location", and then click the [Next] button.
6. Click the [Browse...] button, specify "\Corresponding_language\2K_XP" on the CD-ROM, and then click the [OK] button.
7. Click the [OK] button, and then continue following the instructions in the dialog boxes that appear until the "Completing the Found New Hardware Wizard" dialog box appears.
8. Click the [Finish] button.
9. When the "Found New Hardware Wizard" dialog box appears again, repeat steps 4 through 8 to install all drivers.

<For Windows Me/98>

1. Start up the host computer, and then insert the CD-ROM into the CD-ROM drive.
2. Turn on the printer.
3. Use a USB cable to connect the printer to the host computer.
4. In the "Install Hardware Device Drivers" dialog box, click the [Next] button, select "Search for a suitable driver for my device (recommended)", and then click the [Next] button again.

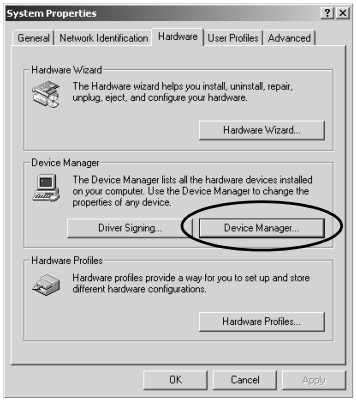
5. Select “Specify a location”, and then click the [Browse...] button.
6. Specify “\Corresponding_language\Win9X” on the CD-ROM, and then click the [OK] button.
7. Click the [OK] button, and then continue following the instructions in the dialog boxes that appear until the “Completing the Found New Hardware Wizard” dialog box appears.
8. Click the [Finish] button.
9. When the “Found New Hardware Wizard” dialog box appears again, repeat steps 4 through 8 to install all drivers.

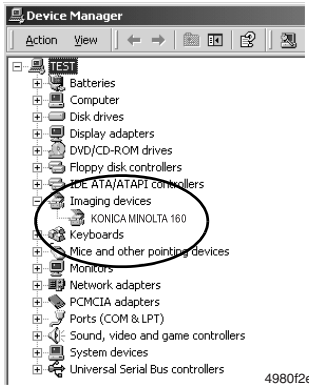
5.2.2 Procedure for Upgrading the Firmware (Engine firmware/ Copier firmware/ FAX firmware/ PCL firmware)

NOTE

- **The engine firmware, Copier firmware, FAX firmware and PCL firmware can be upgraded by using the following procedure.**
- **For the upgrading procedure of NIC firmware, see “NIC NC-501 Upgrading the Firmware.”**

1. Turn on the printer.
2. Start up the host computer (Windows 98 or later).
3. Copy the “Update Software” folder and “Update” file to drive C. (Copy them into the highest directory on drive C.)
4. Use a USB cable to connect the printer to the host computer. (Wait until the hardware is detected.)
5. Display the “System Properties” dialog box (“Properties” for “My Computer”), click the “Hardware” tab, click the [Device Manager] button, select “Imaging devices”, and then check that “KONICA MINOLTA 160 scanner” has been added.





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4980D045AA

6. Double-click “Update” file in the “Update Software” folder.
The “A3S/A4S Update F/W-VX.XX” dialog box appears.

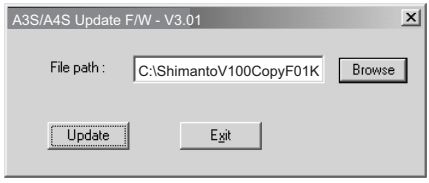


Update.exe 4980D047AA

7. Click the [Browse] button, and then select “Update” file, which was copied onto drive C in step 3.

NOTE

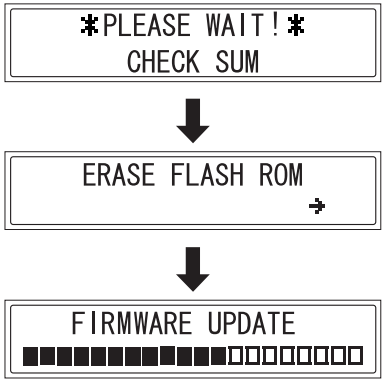
- **The software identifies the type of firmware. Select the Update” file of the engine firmware, Copier firmware, FAX firmware, or PCL firmware and click the “Browse” button.**



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8. Click the [Update] button. The transfer of firmware data begins. (Wait until the transfer of data is finished.)

9. Check the firmware update status in the display.



4980D050AB

NOTE

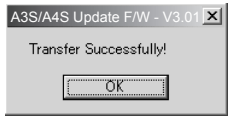
- **Do not turn the printer off or on while the screen shown above is displayed.**

10. Check that the following message appears in the display to indicate that the updating of the firmware is complete.



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11. Click the [OK] button, and then quit the “A3S/A4S Update F/W-VX.XX” application.



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12. Turn the printer off, then on again.

5.2.3 Procedure for Upgrading the FAX Firmware (Upgrading Procedure Using Telephone Line from FAX Machine to FAX Machine)

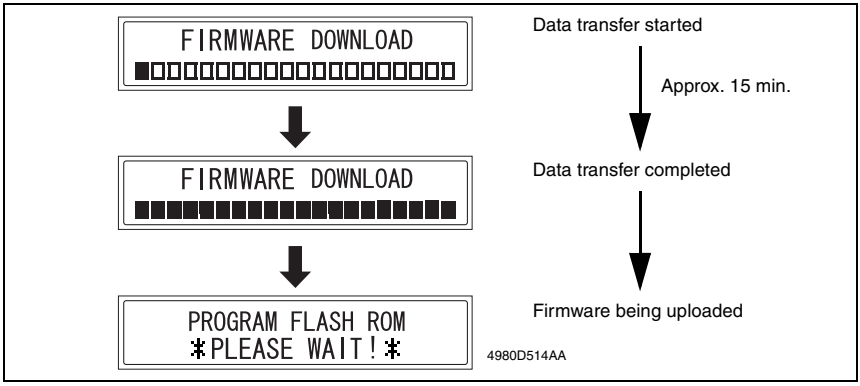
NOTE

- **The firmware transmitter fax machine must be loaded with the latest version of the firmware. If the firmware is not upgraded, do that by following the "Procedure for Updating the Firmware" described in the previous section.**

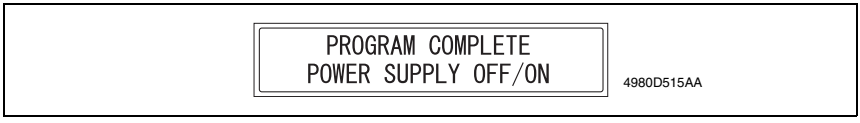
1. Set the REMOTE MONITOR to "FULL" in ADMIN.MANEGEMENT mode of Utility. (Firmware receiver fax machine)
2. Set the firmware transmitter fax machine into the Service mode. Utility, Stop, 0, 0, Stop, 0, 1
3. Select "5. FUNCTION" and then select "UPLOAD FIRMWARE".
4. Type the telephone number, to which the firmware receiver fax machine is connected. (The relevant one touch dial number may be used if the telephone number has been previously programmed in it.)
5. Press the Start key. This starts transfer of the data. The Message Panel of the transmitter fax machine displays the same screen as that appearing during ordinary faxing. When the data transfer is completed, the ordinary standby screen reappears on the Message Panel.
6. The firmware receiver fax machine receives the firmware data. The following message appears on the Message Panel, indicating that transfer of firmware data is started.

NOTE

- **Do not use any of the printer and copier functions until upgrading of firmware is completed.**



7. The following message appears on the Message Panel of the firmware receiver fax machine, indicating that upgrading of the firmware is completed.



8. Turn OFF and ON the Power Switch of the firmware receiver fax machine.

5.3 Remedy for a Failed Updating of the Firmware

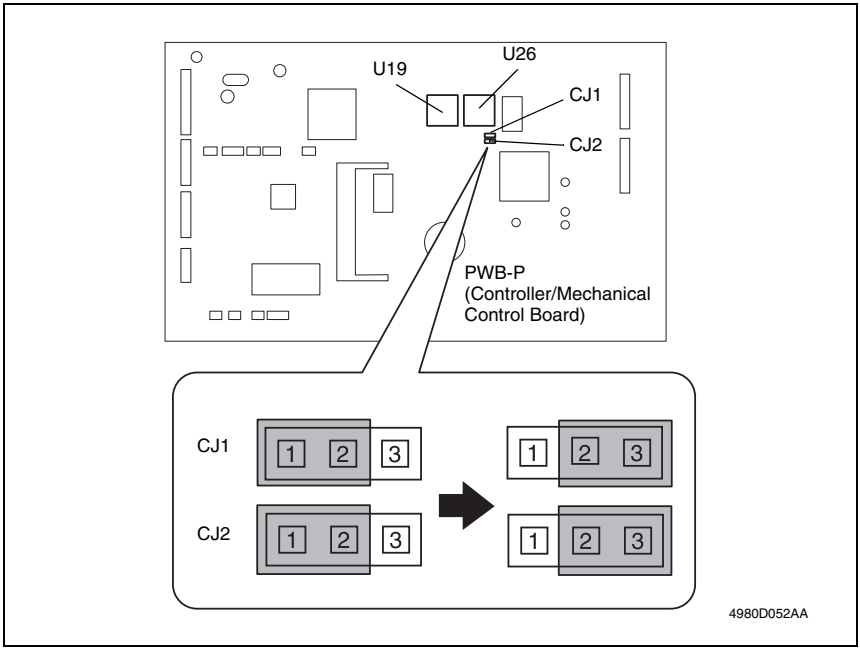
1. Turn off the printer.
2. Remove the USB cable connecting the printer to the host computer.
3. Remove the Rear Cover.

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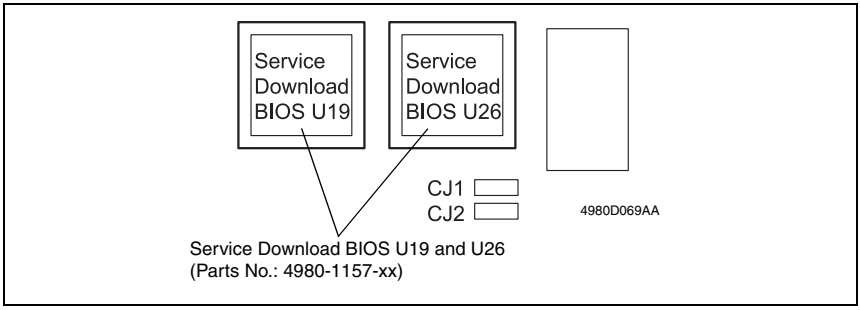
4. Remove the NIC Board. (only when the option NC-501 is mounted)

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5. Change the settings for jumper switches CJ1 and CJ2 on the Controller/Mechanical Control Board from “1-2” to “2-3”.



6. Attach Service Download BIOS U19 and U26 to memory sockets U19 and U26 on the Controller/Mechanical Control Board.



7. Use a USB cable to connect the printer to the host computer.
8. Start up the host computer.
9. Turn on the printer. The following message appears in the display.



10. Perform steps 6 through 10 of “Procedure for Upgrading the Firmware” to update the firmware.
11. Check that the following message appears in the display to indicate that the updating of the firmware has been completed correctly.



12. Turn off the printer.
13. Change the settings for jumper switches CJ1 and CJ2 on the Controller/Mechanical Control Board from “2-3” to “1-2”. (Return them to their default settings.)
14. Remove Service Download BIOS U19 and U26 from memory sockets U19 and U26 on the Controller/Mechanical Control Board.
15. Install the NIC Board. (only when the optional NIC Board is mounted)
16. Install the Rear Cover.
17. Turn on the printer.

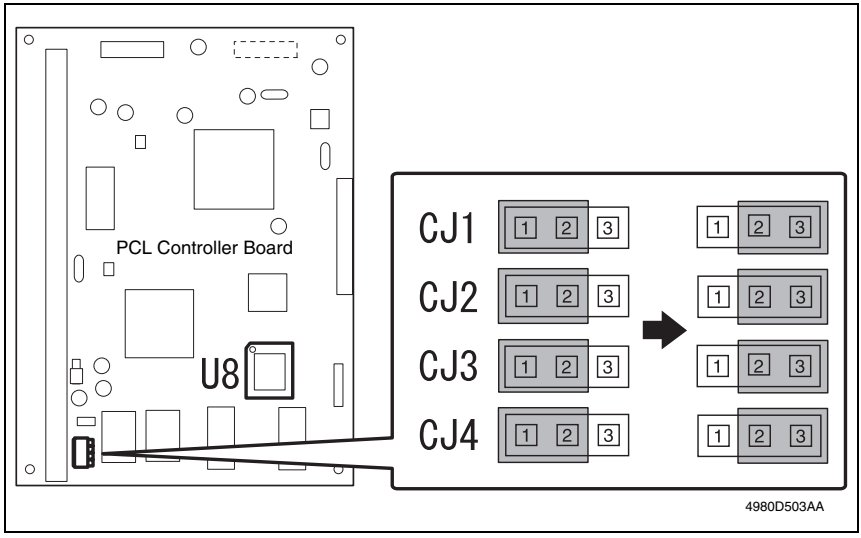
5.4 Remedy for a Failed Updating of the Firmware for PCL (bizhub 161, bizhub 161f only)

When Failed Updating of the PCL6 Firmware (such as updating the Firmware turned the power off, couldn't upgrade the Firmware during the correct method, or if any extraordinary condition happened during upgrading PCL6 firmware), you can use the method step by step as following:

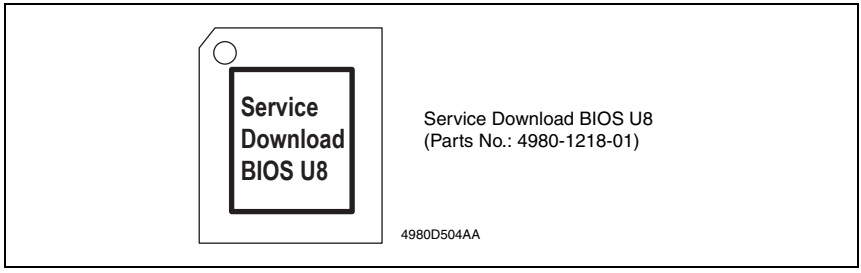
1. Turn off the printer.
2. Remove the USB cable connecting the printer to the host computer.
3. Remove the Rear Cover.

☞ 32

4. Change the settings for jumper switches CJ1/ CJ2/CJ3/CJ4 on the PCL Controller Board from "1-2" to "2-3".



5. Attach Service Download BIOS U8 to memory sockets U8 on the PCL Controller Board.



6. Use a USB cable to connect the printer to the host computer.
7. Start up the host computer.
8. Turn on the printer. There are normally showed in the display.
9. Wait for 30 seconds. until the machine connect the PCL Controller Board finished.
10. Press the Utility key.

11. Press the following keys in this order to enter the Service mode.
    Stop → 0 → 0 → Stop → 0 → 1
12. Check the PCL firmware version that in the service mode.
    → 4. DISPLAY → PCL F/W Ver.
13. If the PCL firmware version can showed on the display mean connect with finished.
14. Perform steps 6 through 10 of “Procedure for Upgrading the Firmware” to update the firmware.
15. Waiting for 90 sec. Check that the following message appears in the display to indicate that the updating of the firmware has been completed correctly.



16. Turn off the printer.
17. Change the settings for jumper switches CJ1/ CJ2/CJ3/CJ4 on the PCL Controller Board from “2-3” to “1-2”.
18. Remove Service Download BIOS U8 to memory sockets U8 on the PCL Controller Board.
19. Install the Rear Cover.
20. Turn on the printer.
21. Check the Version again. Following as step 10 to 12.

6. Other

6.1 Disassembly/Adjustment prohibited items

A. Paint-locked Screws

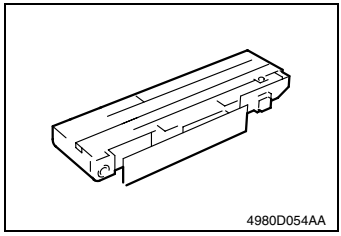
NOTE
- **Paint-locked screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be adjusted, set, or removed in the field.**

B. Red Painted Screws

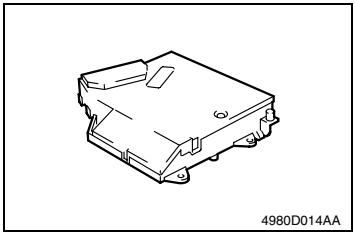
NOTE
- **When the screws are removed, the red paint is coated on the points where readjustment is required.**
- **Once the red painted screw is removed or loosened, you should make adjustment. Accordingly check the adjustment items in operation manual and make necessary adjustment. Note that when two or more screws are used on the part in questions, only one representative screw may be marked with red paint.**

(1) Other Screws not Marked with Red Paint

Scanner Assy



PH Unit



C. Variable Resistors on Board

NOTE
- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

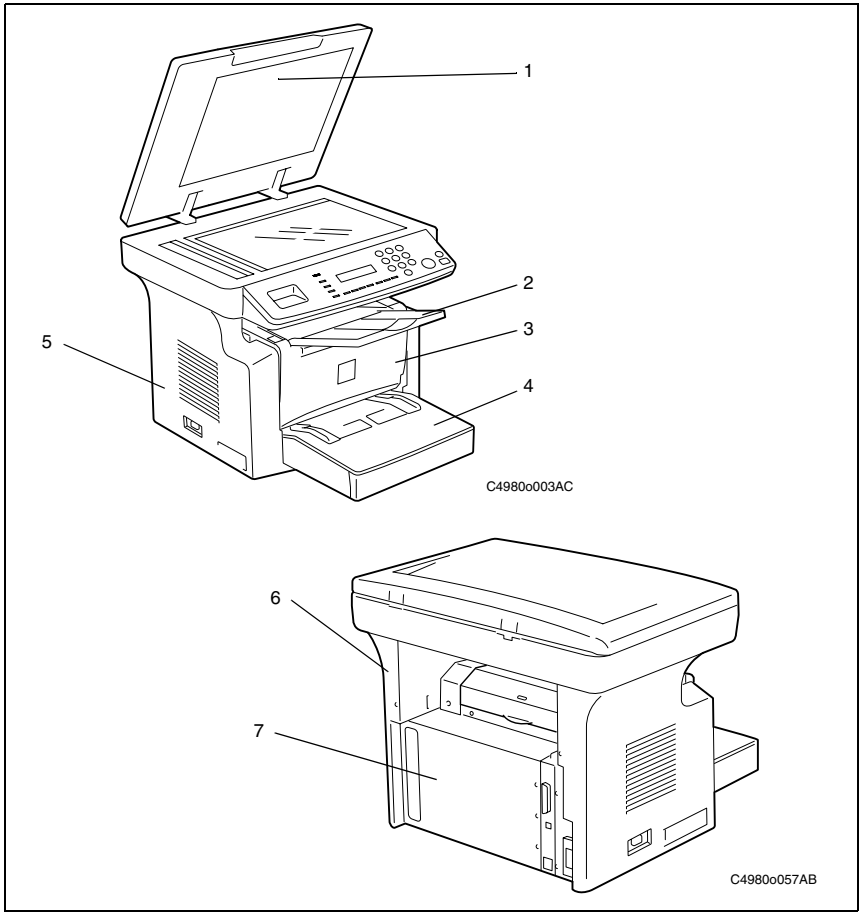
NOTE
- **When removing a circuit board or other electrical component, refer to "Handling of PWBs" and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

6.2 Disassembly/Assembly list (Other parts)

No.	Section	Part name		Ref.Page
1	Exterior parts	Original Cover		☞ 32
2		Exit tray		☞ 32
3		Front Door		☞ 32
4		Tray1 (with Bypass Tray)		☞ 32
5		Left Cover		☞ 32
6		Right Cover		☞ 32
7		Rear Cover		☞ 32
8	Board and etc.	PWB-NIC	Network Interface Card Board * NC-501 Option for bizhub 161/160f/161f	☞ 34
9		PWB-NCU	NCU Board * bizhub 160f/161f only	☞ 34
10		PWB-PCL	PCL Board * bizhub 161/161f only	☞ 35
11		PWB-P	Controller/Mechanical Control Board	☞ 35
12		PWB-O	Control Panel	☞ 36
13		PWB-IF	Interface Board	☞ 37
14		NIC-IF	Plate NIC Board * NC-501 Option for bizhub 161/160f/161f	☞ 38
15		PU1	Power Unit	☞ 39
16		HV1	High Voltage Unit	☞ 42
17	Unit	PH Unit		☞ 43
18	IR	IR Unit		☞ 42
19		Original cover set sensor		☞ 44
20		Upper Cover Assy. (Original Glass)		☞ 44
21		Scanner Motor		☞ 45
22		Scanner Assy.		☞ 45
23		Belt		☞ 46
24	Others	Main Motor		☞ 46
25		Paper Empty Sensors		☞ 47
26		Paper Take-Up Solenoid		☞ 48
27		Paper Take-Up Clutch Gear		☞ 49
28		Torque Limiter		☞ 50
29		Mechanical Counter * Option for bizhub 160/161/160f/161f		☞ 52

6.3 Disassembly/Assembly procedure

6.3.1 Identification of Exterior Parts and Removal Procedures for Them

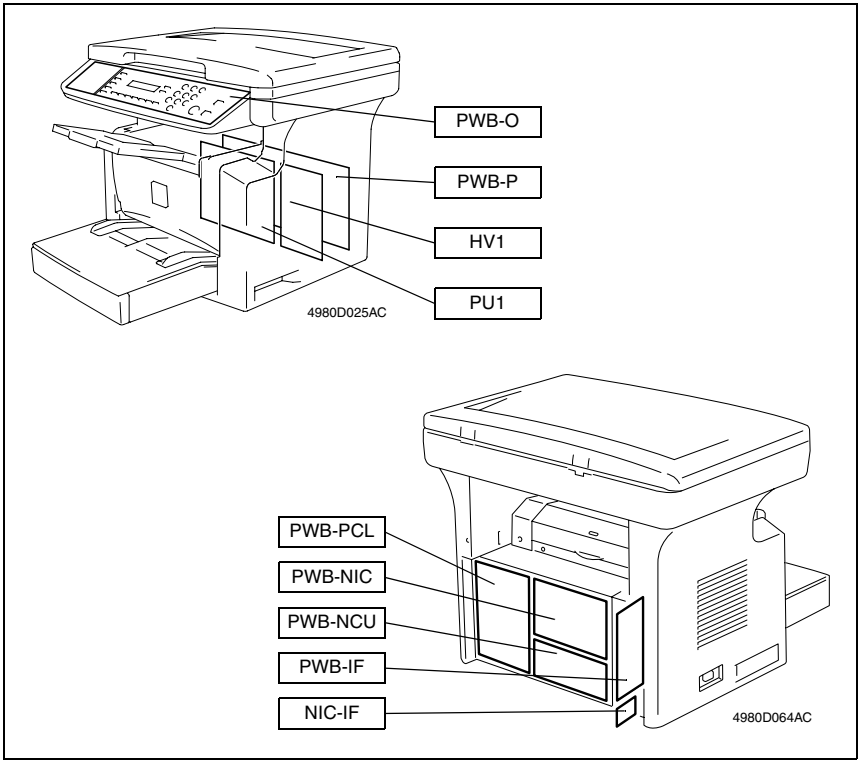


No.	Name	Removal Procedure
1	Original Cover	Open the Original Cover → Pull it straight up.
2	Exit tray	While pressing out one side, remove the Exit tray.
3	Front Door	Open the Front Door. → While pressing in one side, remove the Front Door.
4	Tray1 (with Bypass Tray)	Hold down the main unit with one hand and pull Tray1 off toward you.
5	Left Cover	Open the Front Door. → Remove the screw, unhook the six tabs, and remove the Left Cover.
6	Right Cover	Open the Front Door. → Remove the two screws, unhook the four tabs, and remove the Right Cover.
7	Rear Cover	Remove the five screws, and remove the Rear Cover.

6.3.2 Removal of Circuit Boards and Other Electrical Components

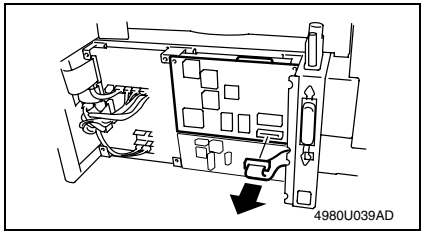
NOTE

- **When removing a circuit board or other electric component, refer to the precautions for handling PWBs and follow the corresponding removal procedures.**
- **The removal procedures given in the following paragraphs omit the removal of the component in question from a connector or a PWB support.**
- **Where it is absolutely necessary to touch the ICs and other electric components on the board, be sure to ground your body.**

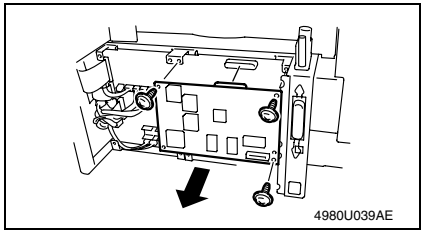


6.3.3 NIC Board (Option for bizhub 161/160f/161f)

1. Remove the Rear Cover.



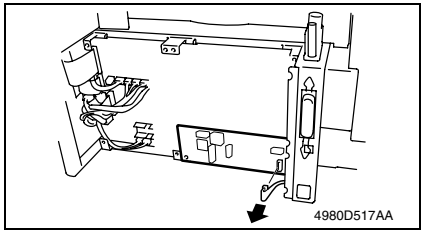
2. Disconnect the connector from the NIC Board.



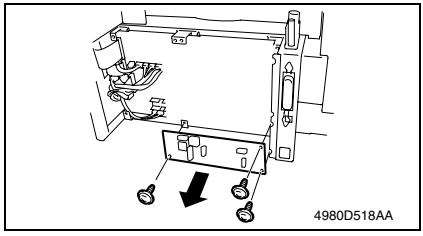
3. Remove three screws.
4. Remove the NIC Board.

6.3.4 NCU Board (bizhub 160f/161f only)

1. Remove the Rear Cover.



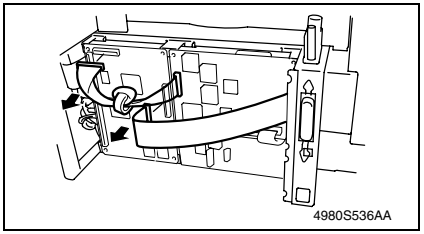
2. Disconnect all connectors from the NCU Board.



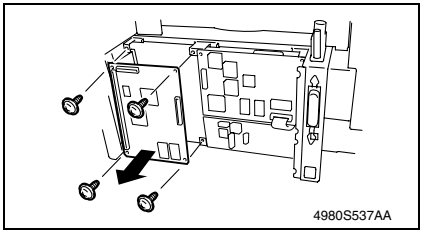
3. Remove three screws.
4. Remove the NCU Board.

6.3.5 PCL Board (bizhub 161/161f only)

1. Remove the Rear Cover.



2. Disconnect all connectors from the PCL Board.



3. Remove four screws.
4. Remove the PCL Board.

6.3.6 Controller/Mechanical Control Board

1. Remove the Rear Cover.

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2. Remove the NIC Board. (only when the option NC-501 is mounted)

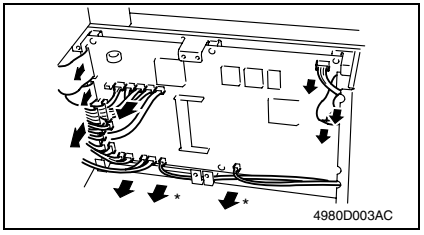
☞ 34

3. Remove the NCU Board. (bizhub 160f/161f only)

☞ 34

4. Remove the PCL Board. (bizhub 161/161f only)

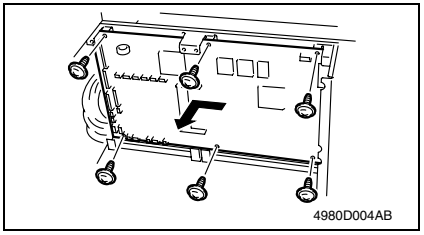
☞ 35



5. Disconnect all connectors and flat cables from the Controller/Mechanical Control Board.

NOTE

- **The two connectors marked with "*" in the illustration are provided for bizhub 160f/161f only.**
- **Use utmost care not to snap off the flat cable.**



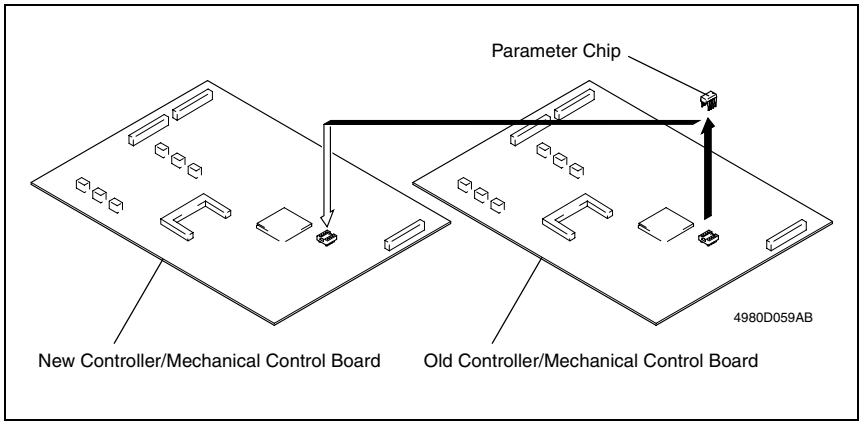
6. Remove six screws.
7. Remove the Controller/Mechanical Control Board.

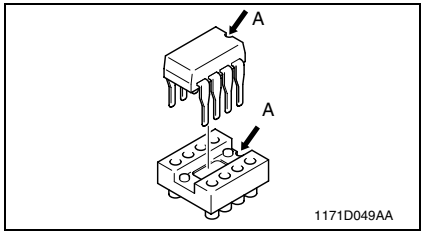
A. Moving the Parameter Chip

NOTE

- **After the Controller/Mechanical Control Board (PWB-P) is replaced, be sure to move the Parameter Chip form the old Controller/Mechanical Control Board to the new one.**

Remove the Parameter Chip (U39) from the old Controller/Mechanical Control Board, and then attach it to the new Controller/Mechanical Control Board.





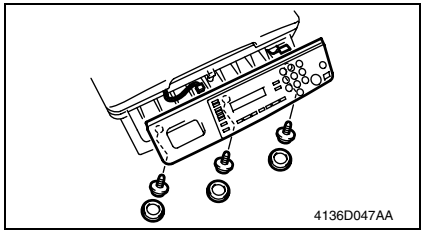
NOTE

- **Be sure to install the Parameter Chip (U39) so that notch A faces the correct direction.**

6.3.7 Control Panel

1. Remove the Exit tray.

☞ 32



2. Remove the Rubber cap, then remove the three screws.
3. Unplug one connector and one flat cable.
4. Remove the Control Panel.

NOTE

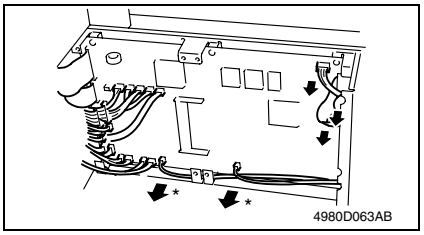
- **Use utmost care not to snap off the flat cable.**

6.3.8 Interface Board

1. Remove the Rear Cover.
☞ 32

2. Remove the NCU Board. (bizhub 160f/161f only)
☞ 34

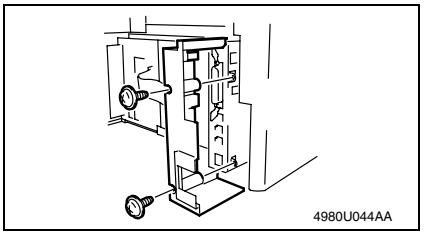
3. Remove the PCL Board. (bizhub 161/161f only)
☞ 35



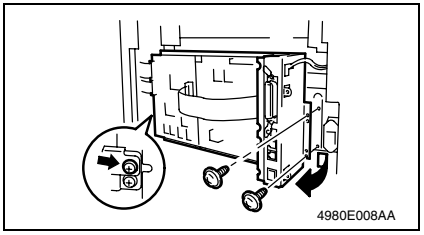
4. Unplug the three connectors on the Controller/Mechanical Control Board. (For bizhub 160/161)
5. Unplug the five connectors on the Controller/Mechanical Control Board. (For bizhub 160f/161f)

NOTE

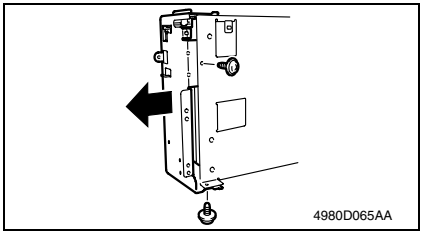
- **The two connectors marked with "*" in the illustration are provided for bizhub 160f/161f only.**



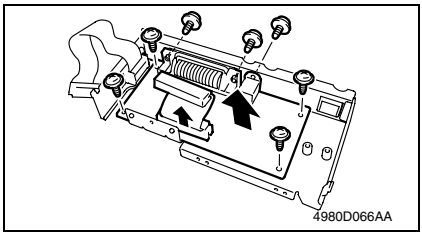
6. Remove the two screws.
7. Remove the Left Rear Cover.



8. Remove the three screws.
9. Remove the Circuit Board and Metal Bracket.



10. Remove the two screws.
11. Remove the Protective Metal Bracket for the Interface Board.



12. Remove the seven screws.
13. Remove the Interface Board.

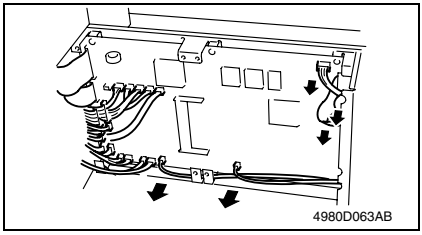
6.3.9 Plate NIC Board (Option for bizhub 161/160f/161f)

1. Remove the Rear Cover.
☞ 32

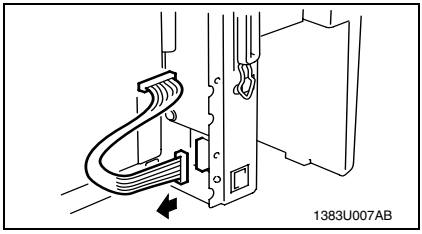
2. Remove the NIC Board. (only when the option NC-501 is mounted)
☞ 34

3. Remove the NCU Board.
☞ 34

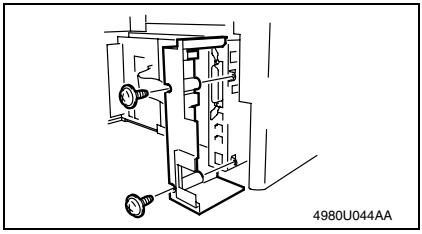
4. Remove the PCL Board. (bizhub 161/161f only)
☞ 35



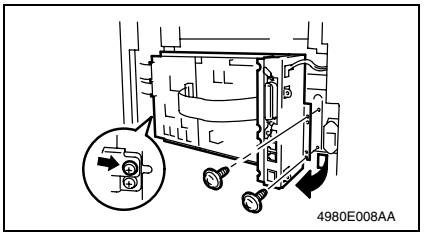
5. Unplug the five connectors on the Controller/Mechanical Control Board.



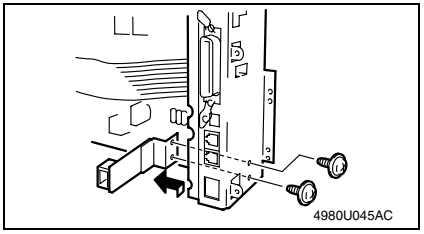
6. Unplug the connector on the Plate NIC Board.



7. Remove the two screws.
8. Remove the Left Rear Cover.



9. Remove the three screws.
10. Remove the Circuit Board and Metal Bracket.



11. Remove the two screws.
12. Remove the Plate NIC Board.

6.3.10 Power Unit

1. Remove the Right Cover.
☞ 32

2. Remove the Left Cover.
☞ 32

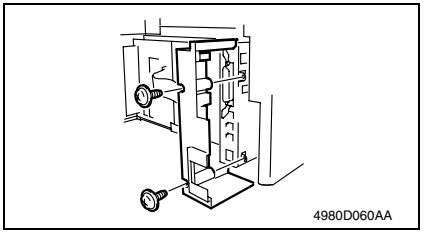
3. Remove the Rear Cover.
☞ 32

4. Remove the NIC Board. (only when the option NC-501 is mounted)
☞ 34

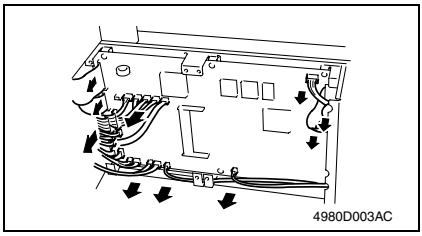
5. Remove the NCU Board. (bizhub 160f/161f only)
☞ 34

6. Remove the PCL Board. (bizhub 161/161f only)
☞ 35

7. Remove the IR Unit.
☞ 42



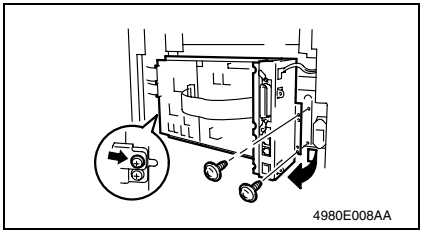
8. Remove the two screws.
9. Remove the Left Rear Cover.



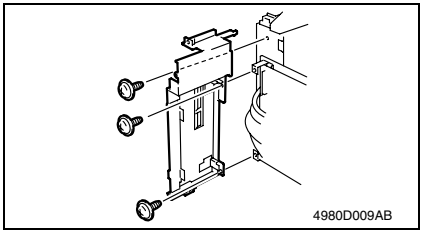
10. Unplug all connector on the Controller/Mechanical Control Board.

NOTE

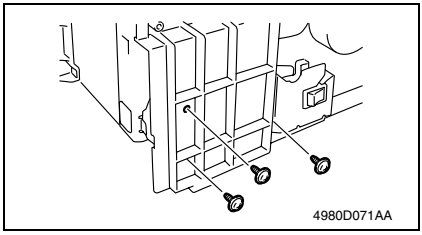
- **The two connectors marked with "*" in the illustration are provided for bizhub 160f/161f only.**



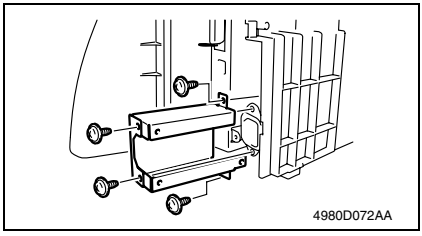
11. Remove the three screws.
12. Remove the Circuit Board and Metal Bracket.



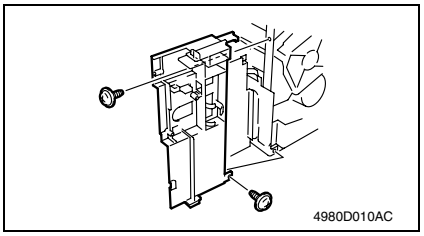
13. Remove the three screws.
14. Unhook the tab, and then remove the Right Rear Frame.



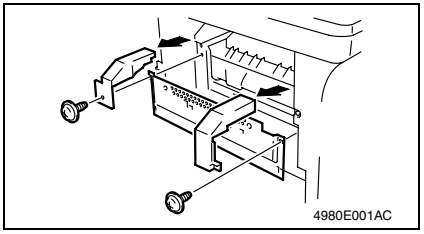
15. Remove the three screws from the Left Rear Frame.



16. Remove the four screws.
17. Remove the Metal Bracket.



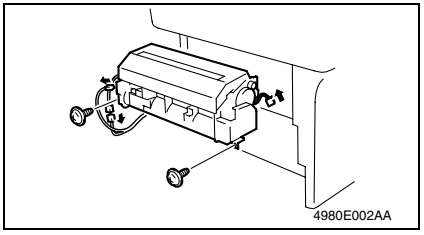
18. Remove the two screws.
19. Unhook the tab, and then remove the Left Rear Frame.



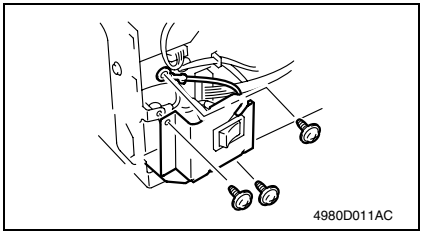
20. Remove the Upper Left Cover.
21. Remove the two screws.
22. Remove the Upper Right Cover and Protective Metal Bracket.

NOTE

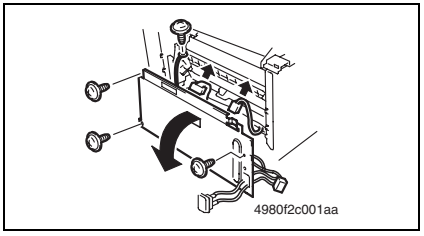
- **The Protective Metal Bracket is tightened together with the Upper Right Cover.**



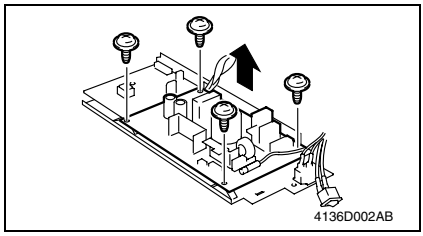
23. Remove the two screws.
24. Unplug the three connectors.
25. Remove the Fusing Unit Assy.



26. Remove three screws.
27. Remove the Power Switch stay.
28. Remove the Power Switch.



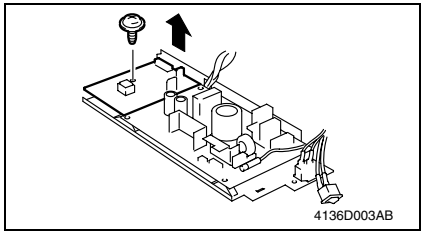
29. Remove four screws.
30. Disconnect three connectors.
31. Remove the Power Unit Assy.



32. Remove four screws.
33. Remove the Power Unit.

6.3.11 High Voltage Unit

1. Remove the Power Unit Assy.
☞ 39



2. Remove one screw.
3. Remove the High Voltage Unit.

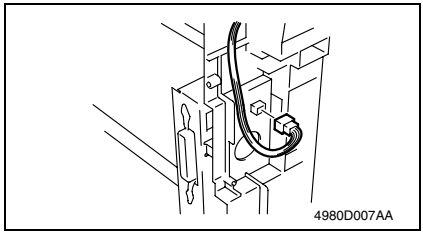
6.3.12 IR Unit

1. Remove the Left Cover.
☞ 32

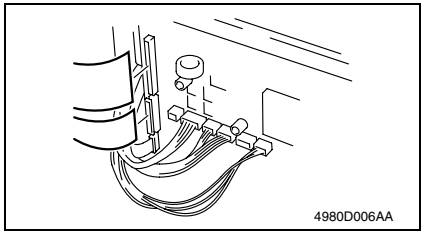
2. Remove the Right Cover.
☞ 32

3. Remove the Rear Cover.
☞ 32

4. Remove the PCL Board. (bizhub 161/161f only).
☞ 35



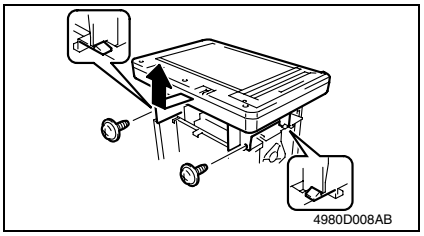
5. Unplug the connector.



6. Unplug the two flat cables from the Controller/Mechanical Control Board.

NOTE

- **Be extremely careful not to break the flat cables.**



7. Remove the two screws.
8. Unhook the two tabs, and then remove the IR Unit.

6.3.13 PH Unit

NOTE

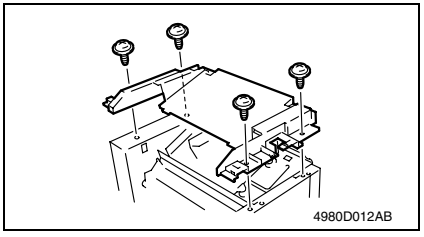
- **NEVER attempt to replace the PH Unit with power being supplied to the printer. Doing that could lead to exposure to the laser beam, resulting in blindness**
- **NEVER attempt to disassemble or adjust the PH Unit. Doing that could lead to exposure to the laser beam, resulting in blindness.**

1. Remove the IR Unit.
☞ 42

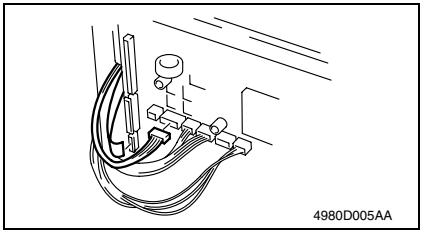
2. Remove the Fusing Unit.
☞ 19

3. Remove the Exit tray.
☞ 32

4. Remove the PCL Board. (bizhub 161/161f only).
☞ 35



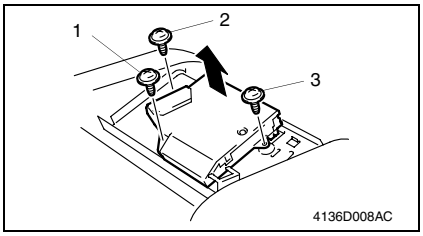
5. Remove the four screws.
6. Unhook the two tabs, and then remove the Upper Cover.



7. Disconnect one flat cable and one connector from the Controller/ Mechanical Control Board.

NOTE

- **Use utmost care not to snap off the flat cable.**



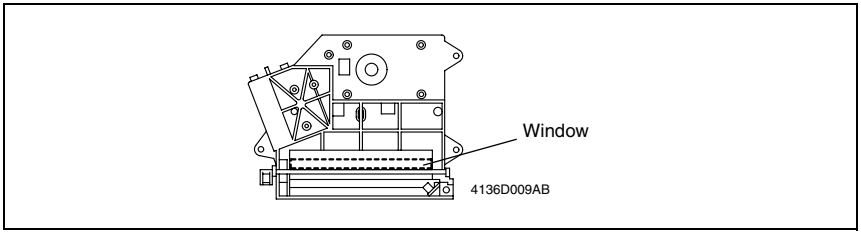
8. Remove three screws.
9. Remove the PH Unit.

NOTE

- **When reinstalling the PH Unit, tighten the screws in the numerical order shown in the illustration.**

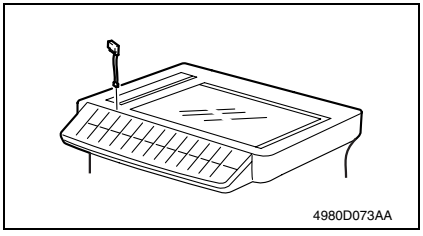
Precautions for Removal/Reinstallation of the PH Unit

- **NEVER touch the window on the backside of the PH Unit. A dirty window can cause an image problem.**



6.3.14 Original Cover Set Sensor

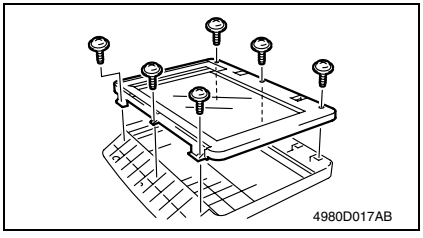
1. Remove the Original Cover.
2. Remove the Control Panel.
☞ 36



3. Remove the Original cover set sensor.

6.3.15 Upper Cover Assy. (Original Glass)

1. Remove the Original Cover.
2. Remove the Control Panel.
☞ 36



3. Remove the six screws.
4. Remove the Upper Cover Assy. (Original Glass).

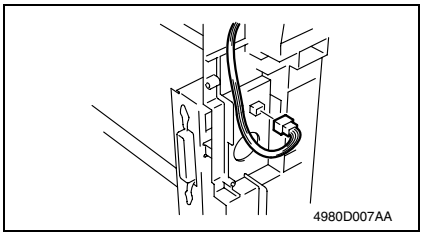
6.3.16 Scanner Motor

1. Remove the Original Cover.
2. Remove the Upper Cover Assy. (Original Glass).

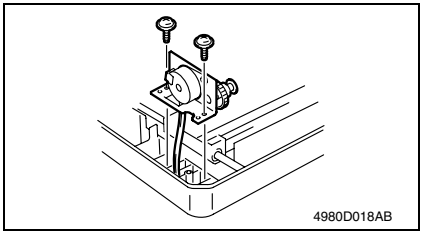
☞ 32

3. Remove the Left Cover.

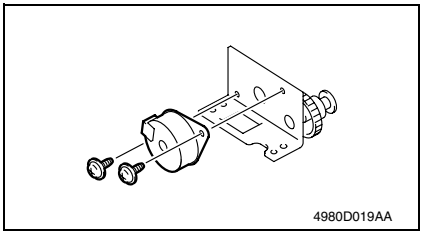
☞ 32



4. Unplug one connector from the Scanner Motor.



5. Remove the two screws.
6. Remove the Scanner Motor Mounting Bracket.

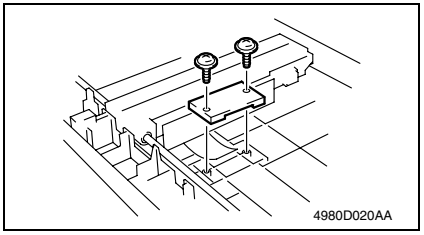


7. Remove the two screws.
8. Remove the Scanner Motor.

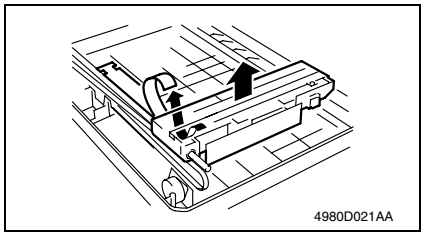
6.3.17 Scanner Assy.

1. Remove the Original Cover.
2. Remove the Upper Cover Assy. (Original Glass).

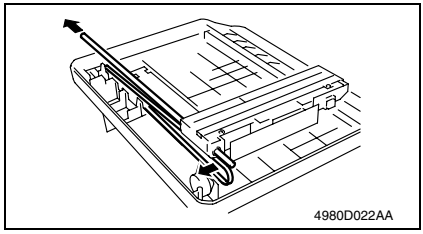
☞ 32



3. Remove the two screws.
4. Remove the Flat Cable Holding Plate.



5. Unplug the Flat Cable.

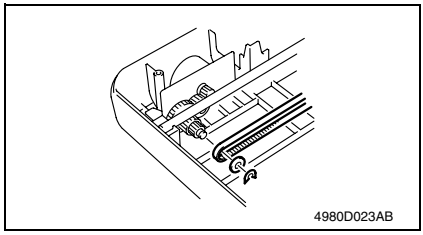


6. Remove the Belt and shaft.
7. Remove the Scanner Assy.

6.3.18 Belt

1. Remove the Original Cover.
2. Remove the Upper Cover Assy. (Original Glass).
☞ 32

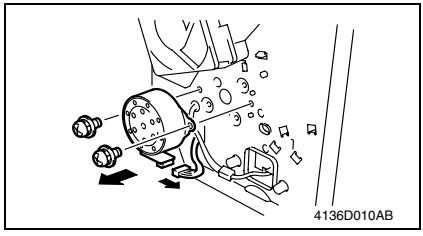
3. Remove the Scanner Assy.
☞ 45



4. Remove the C-clip.
5. Remove the washer.
6. Remove the Belt.

6.3.19 Main Motor

1. Remove the Left Cover.



2. Disconnect one connector.
3. Remove two screws.
4. Remove the Main Motor.

6.3.20 Paper Empty Sensors

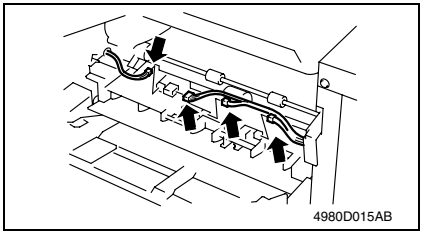
1. Remove the Imaging Cartridge.
2. Remove the Front Door.

NOTE

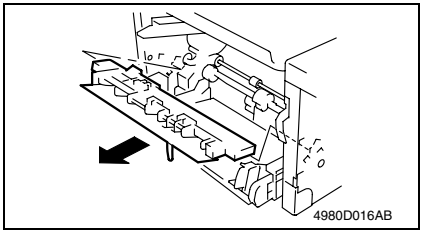
- **The Imaging Cartridge is the Drum Cartridge, to which the Toner Cartridge is mounted.**

3. Remove the Left and Right Covers.

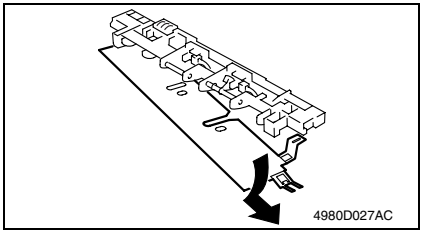
☞ 32



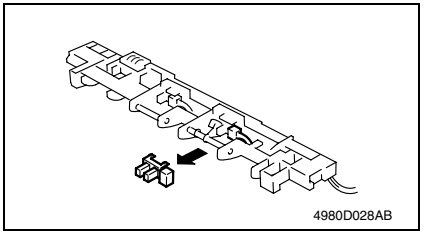
4. Remove the four connectors from the Paper Take-Up Upper Guide Assy.



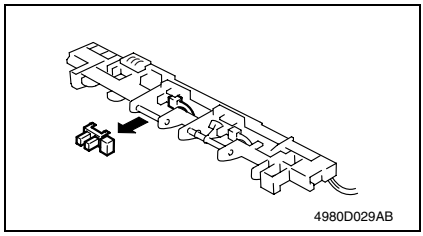
5. Unhook the two tabs, and then remove the Paper Take-Up Upper Guide Assy.



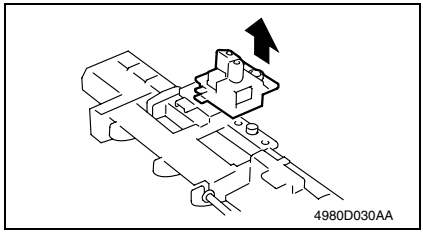
6. Unhook two tabs and remove the tray.



7. Remove the Multi purpose Tray Paper Empty Sensor.



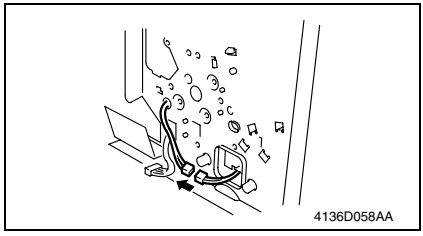
8. Remove the Multiple Bypass Tray Paper Empty Sensor.



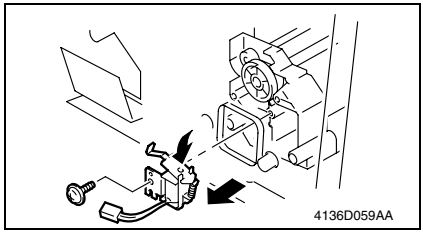
9. Remove the Toner Empty detection sensor.

6.3.21 Paper Take-Up Solenoid

1. Remove the Left Cover.
☞ 32



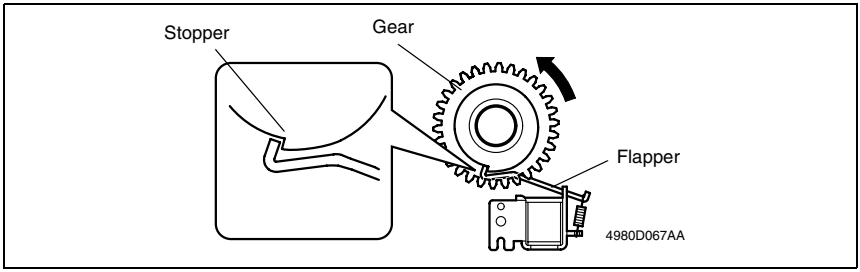
2. Disconnect one connector of the Paper Take-Up Solenoid.



3. Remove one screw.
4. Remove the Paper Take-Up Solenoid.

Precautions for Installation of the Paper Take-Up Solenoid

1. **Mount the Paper Take-Up Solenoid and tighten one screw.**
2. **Turn the gear in the direction of the arrow shown below so that the flapper of the Paper Take-Up Solenoid catches the stopper of the gear.**



6.3.22 Paper Take-Up Clutch Gear

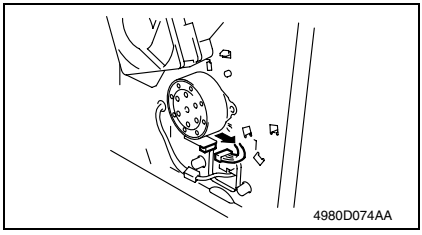
1. Remove the Fusing Unit.

☞ 19

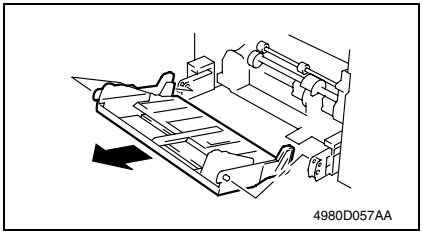
2. Remove the Power Unit.

☞ 39

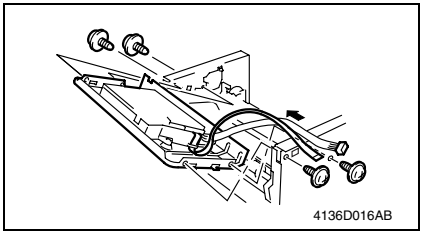
3. Remove the Paper Take-Up Upper Guide Assy.



4. Disconnect one connector and remove the Cooling Fan Motor 2.
5. Disconnect one connector of the Main Motor.



6. Remove the Paper Lifting Plate Assy.
7. Remove two springs.

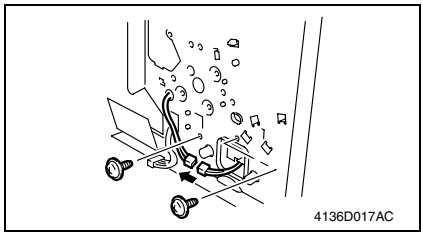


8. Disconnect one connector and one flat cable from the Controller/ Mechanical Control Board.

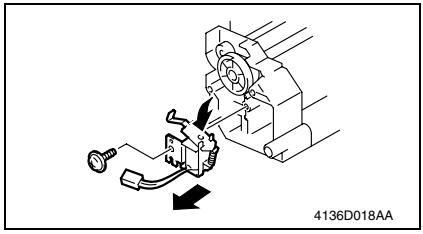
NOTE

- **Use utmost care not to snap off the flat cable.**

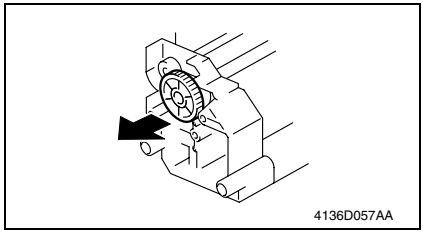
9. Remove the Top Cover.
10. Remove four screws.
11. Remove the PH Base Plate Assy.



12. Disconnect one connector of the Paper Take-Up Solenoid.
13. Remove two screws.
14. Remove the Left Frame.



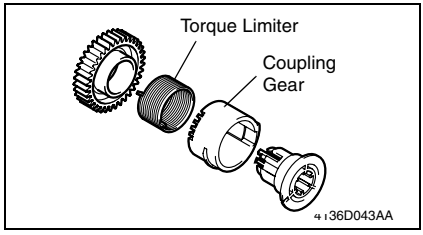
15. Remove one screw.
16. Remove the Paper Take-Up Solenoid.



17. Unhook two tabs and remove the Paper Take-Up Clutch Gear.

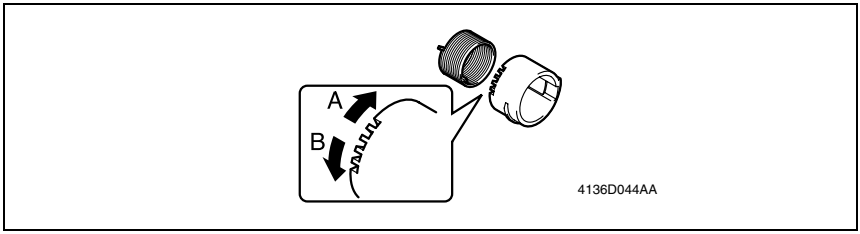
6.3.23 Torque Limiter

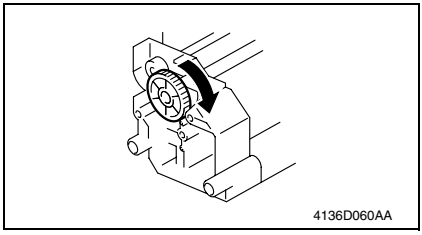
1. Remove the Paper take up Clutch Gear.
☞ 49



2. Unhook three tabs and take apart the Paper Take-Up Clutch Gear then, remove the Torque Limiter.

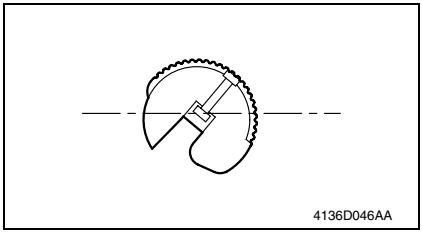
Precautions for Installation of the Torque Limiter
Coupling Gear has five dent for adjustment the Take-Up Roller position. When Torque Limiter is replaced, adjust the set position of the Coupling Gear so that the Take-Up Roller becomes level. The procedure is as follow.



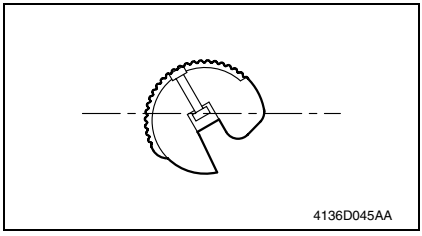


After setting replaced Paper Take-Up Clutch Gear (Torque Limiter) to the shaft, Rotate the Paper Take-Up Clutch Gear by hand (Need to be released Solenoid Flapper).

Look at the stop position of the Take-Up Roller from Clutch Gear side.



1. **When the Roller is lent to clockwise, move the coupling Gear to A direction.**



2. **When the Roller is lent to counter clockwise, move the coupling Gear to B direction.**

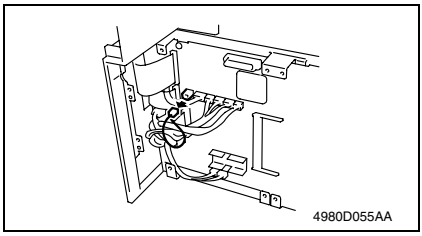
6.4 Option Counter

6.4.1 Removal of the Mechanical Counter (Option for bizhub 160/161/160f/161f)

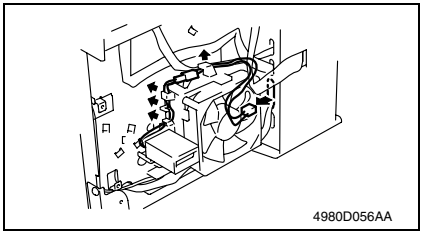
1. Remove the Right Cover.
☞ 32

2. Remove the Rear Cover.
☞ 32

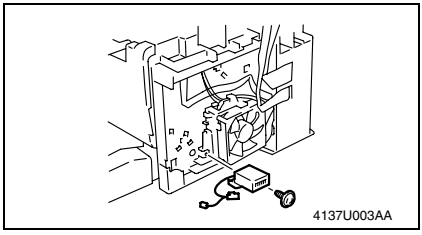
3. Remove the PCL Board. (bizhub 161/161f only)
☞ 35



4. Unplug one connector on the Controller/Mechanical Control Board.



5. Remove the Relay Harness.



6. Remove the screw, and then remove the Mechanical Counter.

Adjustment/Setting

7. How to use the adjustment section

- "Adjustment/Setting" contains detailed information on the adjustment items and procedures for this machine.
- Throughout this "Adjustment/Setting," the default settings are indicated by " ".

A. Advance Checks

- Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

1. The power supply voltage meets the specifications.
2. The power supply is properly grounded.
3. The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
4. The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
5. The original has a problem that may cause a defective image.
6. The density is properly selected.
7. The Original Glass, slit glass, or related part is dirty.
8. Correct paper is being used for printing.
9. The units, parts, and supplies used for printing (developer, PC Drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
10. Toner is not running out.

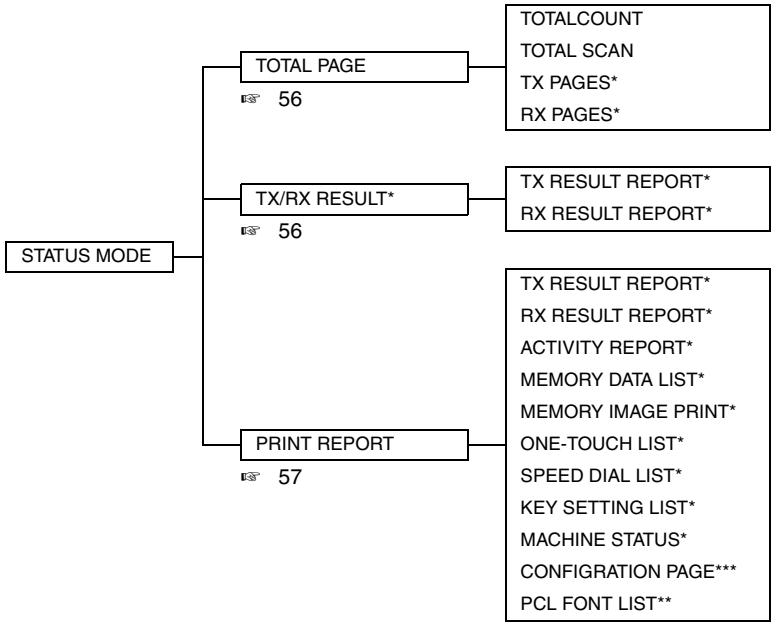
B. Precautions for Service Jobs

1. To unplug the power cord of the machine before starting the service job procedures.
2. If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the Scanner Cables or gears of the Exposure Unit.
3. Special care should be used when handling the Fusing Unit which can be extremely hot.
4. The Developing Unit has a strong magnetic field. Keep watches and measuring instruments away from it.
5. Take care not to damage the PC Drum with a tool or similar device.
6. Do not touch IC pins with bare hands.

8. Status Mode

- The total number of pages printed and scanned since this machine was installed can be checked.
- Results of 60 past faxes sent and received and counter information are displayed on the LCD, and various reports are printed. (bizhub 160f/161f only)
- The reports and the lists are printed. (bizhub 160f/161f only)

8.1 Status Mode function tree



*: bizhub 160f/161f only
**: bizhub 161/161f only
***: bizhub 161/160f/161f only

8.2 Status Mode setting procedure

8.2.1 Procedure

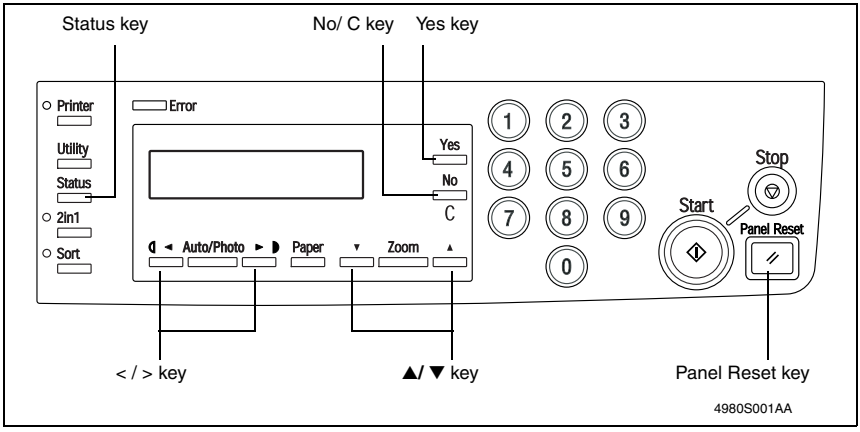
1. Press the Status key.
2. The first Status screen appears.

8.2.2 Exiting procedure

- Press the Panel Reset key.

8.2.3 Changing the Status Mode functions

1. Press the ▲/ ▼ key or < / > key to select the desired function.
2. Press the Yes key to apply the setting.
3. To return to the previous screen, press the No/ C key.



8.2.4 TOTAL PAGE

Functions	• Total Count: Displays the total number of pages printed since this machine was installed. • Total Scan : Displays the total number of pages scanned since this machine was installed. However, the scanned number of pages in copy are not included. • TX Pages* : Displays the total number of pages faxed since this machine was installed. • RX Pages* : Displays the total number of pages received since this machine was installed.
Use	• The total number of pages printed and scanned since this machine was installed can be checked.
Setting/Procedure	*1.* Press the Status key. *2.* Press the Yes key. *3.* Press the ▼ and ▲ keys to check the “TOTAL COUNT”, “TOTAL SCAN”, “TX PAGES” or “RX PAGES” values.

* : Available only if the bizhub 160f/161f.

8.2.5 TX/ RX RESULT (bizhub 160f/161f only)

Functions	• TX Result Report : Displays the transmission result report. • RX Result Report : Displays the reception result report.
Use	• Results of 60 past faxes sent and received and counter information are displayed on the LCD, and various reports are printed.
Setting/Procedure	*1.* Press the Status key twice. *2.* Press the Yes key. *3.* Press the t and s keys to display the desired transmission results to check them. • In the transmission result screen, “TX” indicates sent faxes, and “RX” indicates received ones. • To print the transmission result report, press the Start key. After the transmission result report is printed, the main screen appears. • If the No key is pressed twice while the transmission results are displayed, the main screen appears.

8.2.6 PRINT REPORT (bizhub 161/160f/161f only)

Functions	• TX Result Report* : Prints the transmission result report. • RX Result Report* : Prints the reception result report. • Activity Report* : Prints the transmission/reception result report. • Memory Report* : Prints the list of documents stored in the memory. • Memory Image Report* : Prints the reduced image of the first page of the document stored in the memory. • One Touch List* : Prints the recipients programmed in the one-touch dial keys. • Speed Dial List* : Prints the recipients programmed for the speed dial numbers. • Key Setting List* : Prints the settings specified for one-touch dial keys. • Machine Status List* : Prints the current machine status. • Configuration Page** : Prints the current machine configuration.
Use	• The reports and the lists are printed.
Setting/Procedure	*1.* Press the Status key 3 times. *2.* Press the Yes key. *3.* Press the t and s keys to select the report/list that you wish to print, and then press the Yes key. After the specified report/list is printed, the main screen appears again. **NOTE** • **The reception/transmission result reports can be checked on screen. For details on viewing the transmission result, refer to "TX/ RX Result."** ☞ 56

* : Available only if the bizhub 160f/161f.
** : Available only if the bizhub 161/160f/161f.

- TX result report (example)

TX RESULT REPORT

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

SESSION	FUNCTION	No.	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	001	AAA NEWYORK 012345678	JAN.23	17:43	010	00h00min00s	G3	OK

- RX result report (example)

RX RESULT REPORT

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

SESSION	FUNCTION	No.	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0069	RX	001	AAA NEWYORK 012345678	JAN.22	20:07	010	00h00min00s	G3	OK

- Activity report (example)

ACTIVITY REPORT

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

NO.	SESSION	DATE	TIME	TX/RX	DESTINATION STATION	PAGE	DURATION	MODE	RESULT
01	0034	JAN.22	20:07	TX---	AAA NEWYORK 012345678	010	00h00min00s	G3 -2.4	OK
02	0048	JAN.23	14:20	---RX	ZZZ LONDON 876543210	001	00h00min00s	G3 -2.4	OK

- Memory data list (example)

MEMORY DATA LIST

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

SESSION	FUNCTION	TIME	NO.	DESTINATION STATION	PAGE
0077	TX	16:03	001	DELLY OFFICE	001

- Memory image print (example)

MEMORY IMAGE

MEMORY IMAGE PRINT

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

SESSION	FUNCTION	NO.	DESTINATION STATION	DATE	TIME	PAGE
0077	TX	001	DELLY OFFICE	JAN.26	16:03	001

- One-touch list (example)

ONE TOUCH LIST

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

OT-NO.	DESTINATION STATION	DESTINATION NUMBER	BATCH TIME	SPEED	SET DATE
OP-01	AMSTERDAM OFFICE	0P09876543		33.6	JAN.20.2001

- Speed dial list (example)

SPEED DIAL LIST

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

SP-NO.	DESTINATION STATION	DESTINATION NUMBER	SPEED	SET DATE
SP-001	SYDNEY OFFICE	0P111222333444	33.6	JAN.26.2004

- Key setting list (example)

KEY SETTING LIST

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

KEY-NO.	TIMER	FUNCTION	NO.	DESTINATION STATION
OT-01		APORO OFFICE	01	OT-01 J.B 999888777666 SUB:1234

- Machine status list (Page1: example)

MACHINE STATUS LIST

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2004 15:12

..MACHINE SETTING..

AUTO RESET (min.)	OFF
ENERGY SAVE MODE (min.)	15
DENSITY (ADF)	MODE 1
DENSITY (BOOK)	MODE 1
PRINT DENSITY	LIGHT ■■■■■■■ DARK
LCD CONTRAST	LIGHT ■■■■■ DARK
LANGUAGE	ENGLISH
LAMP OFF TIME	MODE 1
BUZZER VOLUME	LOW
INITIALMODE	COPY

..PAPER SOURCE SETTING..

	TRAY PAPER	TRAY SETTING
TRAY1	A4 L	CONTINUOUS
TRAY2	A4 L	CONTINUOUS

..COPY SETTING..

PAPER PRIORITY	TRAY 1
DENSITY PRIORITY	AUTO DENSITY
DENSITY LEVEL (AUTO)	LIGHT ■■■ DARK
DENSITY LEVEL (MANUAL)	LIGHT ■■■■■■■ DARK
OUTPUT PRIORITY	NON
ADF RESOLUTION	600X300

..FAX REGISTRATION..

ONE TOUCH OR GROUP DIAL	10/15 RESERVED	
SPEED DIAL	004/210 RESERVED	
PROGRAM DIAL	(12) NONE (13) PROGRAM (14) PROGRAM 15) PROGRAM	
BATCH TX	00/15	
MAIL BOX	(01) ID= NONE	(02) ID= NONE
	(03) ID= NONE	(04) ID= NONE
	(05) ID= NONE	

..TX OPERATIONS..

SCAN CONTRAST	LIGHT ■■■■■■■ DARK
RESOLUTION	STANDARD
DEFAULT TX	MEMORY TX
HEADER	ON

..RX OPERATIONS..

MEMORY RX MODE	OFF
NO. OF RINGS	2
RIDUCTION RX	ON
RX PRINT	MEMORY RX
RX MODE	AUTO RX
FORWARD	ON(PRINT)
FOOTER	OFF
SELECT TRAY	TRAY1 :ENABLE
CLOSED NETWORK	OFF

Confidential – for internal use only, do not distribute

- Machine status list (Page2: example)

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2004 15:12

MACHINE STATUS LIST

..COMM SETTING..

TONE/PULSE	TONE
LINE MONITOR	LOW
PSTN/PBX	PSTN

..REPORTING..

ACTIVITY REPORT	ON
RESERVATION REPORT	OFF
TX RESULT REPORT	OFF
RX RESULT REPORT	OFF

..INITIAL USER DATA..

DATE AND TIME	JAN.27.2004 10:00 +00:00
USER FAX NUMBER	0P1234567890
USER NAME	AAABBBCCC DDDEEE

..NETWORK SETTING..

IP ADDRESS	111.222.333.444
SUBNET MASK	555.666.777.888
GATEWAY	999.000.111.222
DNS CONFIG.	DISABLE
GATEWAY TX	DISABLE

..E-MAIL SETTING 1..

SENDER NAME	
E-MAIL ADDRESS	aaa@bbb.com
SMTP SERVER	333.444.555.666
SMTP PORT NO.	77
SMTP TIMEOUT (sec.)	60
TEXT INSERT	OFF
DEFAULT SUBJECT	from aaa

..E-MAIL SETTING 2..

POP3 SERVER	888.999.000.111
POP3 PORT NO.	888
POP3 TIMEOUT (sec.)	60
POP3 ACCCOUNT	aaa
POP3 PASSWORD	****
AUTO RECEPTION (min.)	OFF
REPLAY ADDRESS	ccc@bbb.com
HEADER PRINT	ON

..SCANNER SETTING..

RESOLUTION	300X300
IMAGE FORMAT	TIFF
CODING METHOD	MH

..OTHER STATUS..

TX/RX TOTAL PAGES	TX	000000	RX	000000
USER COUNTER	TOTAL COUNTER	000000		
	SCAN COUNTER	000000		

- Configuration page (example: bizhub 160f)

KONICA MINOLTA 160f

Printer Configuration Page

Printer Information
Printer F/W : 100
Maser F/W : 100
Total Count : 000000
Size Count : 000000

Printer Configuration
Printer Memory : 16Mbytes
TRAY 1: A4
TRAY 2: A4
Bypass : Installed
Output Tray : Installed
Network : Ethernet

Network Setting
Network Firmware : 100
Network Address : 00:00:00:00:00:00
Network Speed : AUTO

TCP/IP Network Information
Protocol Address : 000.000.000.000
Subnetmask : 000.000.000.000
Default Gateway : 000.000.000.000
IPP http ://000.000.000.000/ipp.cgi

Novell Network Information :
Printer Server Name :
Password Defined :
Preferred Server Name :
Connection Mode : Directory Services
Preferred NDS Tree :

- Configuration page (example: bizhub 161f)

KONICA MINOLTA 161f Printer Configuration Page

Printer Information
Maser F/W : 100
Printer F/W : 100
Language : English
Total Count : 000000
Paper Size Count : 000000

Printer Configuration
Printer Memory : 16Mbytes
TRAY 1: A4
TRAY 2: A4
Bypass : Installed
Output Tray : Standard
NIC : Installed

PDL Information
Paper size : A4
Orientation : Portrait
Copies : 1
Paper Source : Auto
Font Name : Courier
Size : 12.0
Pitch : 10.0
Symbol Set : PC-8
Form Length : 64

Network Information
NIC F/W : 5.03
Hardware Address: 00:00:00:00:00:00
Network : Ethernet
Network Speed : Auto

TCP/IP Configuration
IP Address : 000.000.000.000
Subnetmask : 000.000.000.000
Gateway : 000.000.000.000
IPP: HTTP: //000.000.000.000/ipp.cgi
DHCP Server : 000.000.000.000
IP Mode : DHCP

- PCL font list (example: bizhub 161f)

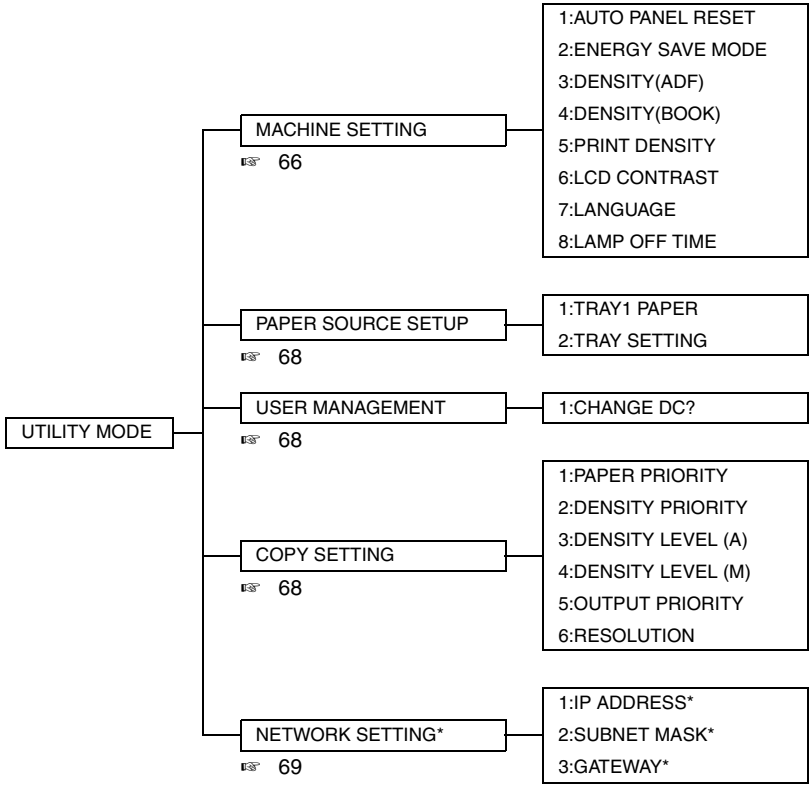
KONICA MINOLTA bizhub 161f PCL Font List **1**

Font ID	Symbol Set	Fix/ PS	Pitch (cpi)	Point Size	Style	Stroke Weight	Name or Typeface	Print Sample & Escape Sequence
01	PC-8	F	Scale		Upright	Medium	Courier	
02	PC-8	P		Scale	Upright	Medium	CG Times	
03	PC-8	P		Scale	Upright	Bold	CG Times Bold	
-	-	-	-	-	-	-	-	
53	PC-850	F	16.67/8.5		Upright	Medium	Line Printer	

9. Utility Mode (bizhub 160/bizhub 161)

- This mode is used to set various machine functions.

9.1 Utility Mode function tree



*: Available only if the NIC NC-501 is installed. (bizhub 161 only)

9.2 Utility Mode setting procedure

9.2.1 Procedure

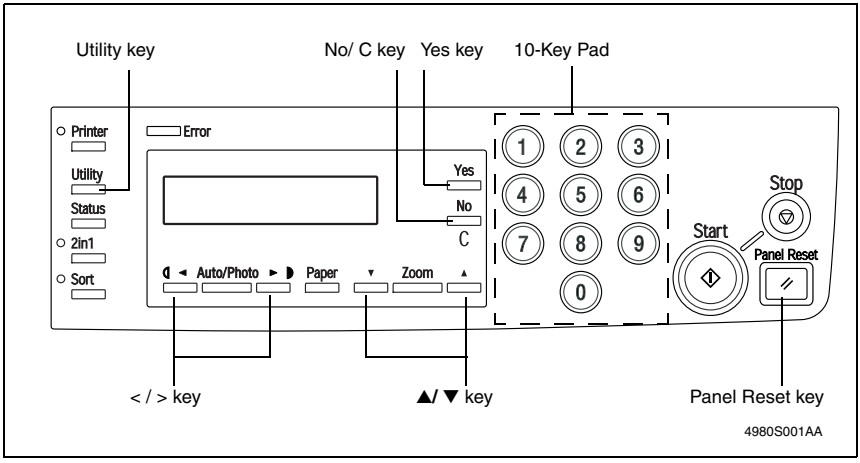
1. Press the Utility key.
2. The first Utility Mode screen appears.

9.2.2 Exiting procedure

- Press the Panel Reset key.

9.2.3 Changing the settings for Utility Mode functions

1. Press the ▲/ ▼ key, < / > key or the 10-Key Pad to select the desired function.
2. Press the ▲/ ▼ key, < / > key or the 10-Key Pad to select the desired setting.
3. Press the Yes key to apply the setting.
4. To return to the previous screen, press the No/ C key.



9.2.4 MACHINE SETTING

- Various settings for the machine's operating environment can be specified.

A. AUTO PANEL RESET

Functions / Use	• To specify the time until the auto panel reset operation is performed after a copy cycle has been completed or after the last key operation.
Setting/Procedure	• The default setting is "1" minute. OFF ON : 0.5 "1" 2 3 4 5 (min)

B. ENERGY SAVE MODE

Functions / Use	• To specify the time until the machine enters Energy Save mode after a copy cycle has been completed or after the last key operation.
Setting/Procedure	• The default setting is "15" minutes. "15" min (1 to 240)

C. DENSITY (ADF)

Functions / Use	• To specify the scanning density when using the Automatic Document Feeder. **NOTE** • **In order to reduce the appearance of spots in copies, the Automatic Document Feeder density level is set for lighter copies as a default.**
Setting/Procedure	• The default setting is "MODE1." "MODE 1" : For a lighter copy density in order to reduce the appearance of spots in copies MODE 2 : For printing copies with the same density as the document

D. DENSITY (BOOK)

Functions / Use	• To specify the scanning density when using the Original Glass.
Setting/Procedure	• The default setting is "MODE1." "MODE 1" : For printing copies with the same density as the document MODE 2 : For a lighter copy density in order to reduce the appearance of spots in copies

E. PRINT DENSITY

Functions / Use	• To specify the default print density.
Setting/Procedure	• The default setting is "0." "0" (-3 to +3)

F. LCD CONTRAST

Functions / Use	• To specify the brightness of the display.
Setting/Procedure	• The default setting is "0." "0" (-1 to +2)

G. LANGUAGE

Functions / Use	• To specify the language of screens.
Setting/Procedure	• The default setting is “ENGLISH.” • The language settings are divided into Type 1 and Type 2. • The Type 1 languages are the standard. Available Languages Type1 “ENGLISH” GERMAN FRENCH ITALIAN DANISH DUTCH SPANISH NORWEGIAN SWEDISH FINNISH TURKISH PORTUGUESE Type2 “ENGLISH” GERMAN FRENCH CZECH HUNGARIAN POLISH ROMANIAN LITHUANIAN SLOVAKIAN

H. LAMP OFF TIME

Functions / Use	• To specify the time until the Exposure Lamp goes off.
Setting/Procedure	• The default setting is “MODE1.” “MODE 1” : When four hours have passed since the last operation was performed MODE 2 : When the machine enters Energy Save mode

9.2.5 PAPER SOURCE SETUP

• Various settings for the paper tray can be specified.

A. TRAY1 PAPER

Functions / Use	• To specify the type and size of paper loaded into Tray1.
Setting/Procedure	• Default setting of paper type is “PLAIN.” “PLAIN” OHP CARD ENVELOPE • Default setting of paper size depend on the marketing area setting. Metric area : “A4”, Inch area : “LT” A5 B5 A4 FLS 16K HL LT LG **NOTE** • **If “OHP” is selected as the paper type, only “A4” and “LT” are available as paper sizes.** • To specify a custom paper size, type in the size.

B. TRAY SETTING

Functions / Use	• To specify whether or not auto tray switching is enabled for each paper tray.
Setting/Procedure	• The default setting is “CONTINUOUS.” FIXED “CONTINUOUS”

9.2.6 USER MANAGEMENT

- Various functions for use of the machine can be set.

A. CHANGE DC?

Functions / Use	• To clear the I/C COUNTER value.
Setting/Procedure	**NOTE** • **If the Drum Cartridge has been replaced, never fail to use this function to clear the "I/C COUNTER" value.** • **This function has the same effect as "SERVICE MODE/CLEAR DATA/I/C COUNTER."** ☞ 121

9.2.7 COPY SETTING

- The default settings for each copy function can be specified.

A. PAPER PRIORITY

Functions / Use	• To specify the paper tray that is given priority.
Setting/Procedure	• The default setting is "TRAY1." "TRAY1" TRAY2

B. DENSITY PRIORITY

Functions / Use	• To specify the image density setting that is selected when the machine is turned on or the Panel Reset key is pressed.
Setting/Procedure	• The default setting is "AUTO." "AUTO" MANUAL PHOTO

C. DENSITY LEVEL (A)

Functions / Use	• To specify the default density level when the Auto setting is selected.
Setting/Procedure	• The default setting is NORMAL "0." "0" (-1 to +1)

D. DENSITY LEVEL (M)

Functions / Use	• To specify the default density level when manually setting the image density.
Setting/Procedure	• The default setting is NORMAL "0." "0" (-4 to +4)

E. OUTPUT PRIORITY

Functions / Use	• To specify the default finishing setting.
Setting/Procedure	• The default setting is "NON." "NON" SORT

F. RESOLUTION

Functions / Use	• To specify the scanning resolution.
Setting/Procedure	• The default setting is “600×300.” “600×300” 600×600

9.2.8 NETWORK SETTING

- Depending on the network environment in which the machine is located, there may be some restrictions on the network functions that the machine can use. Make the network settings to suit the functions and environment required for customer’s location. The network settings can be specified from the control panel or using the administrator mode of Page Scope Web Connection.

A. IP ADDRESS

Functions / Use	• This function is used to specify the IP address for the copier. **NOTE** **• Available only if the NIC NC-501 is installed.** **• Please consult customer’s network administrator for information about the IP address to use.**
Setting/Procedure	• The default setting is “AUTO.” “AUTO” SPECIFY • If AUTO is selected, the IP address is automatically acquired from the DHCP server. **NOTE** **• AUTO is only enabled if there is a DHCP server available on the network.** **• When IP address cannot be acquired from the DHCP server, IP address is acquired by the “Auto-IP function.”** **• When AUTO is selected, there is no need to set the subnet mask or gateway setting. When using a fixed IP address, IP Address in NVRAM must be selected for Page Scope Web Connection.** **• Select this option from the “TCP/IP Configuration” menu on the “Network” tab.** • If SPECIFY is selected, the screen for entering the IP address appears.

B. SUBNET MASK

Functions / Use	• This function is used to specify the subnet mask value for the network. **NOTE** **• Available only if the NIC NC-501 is installed.** **• Please consult customer's network administrator for information about the subnet mask to use.**
Setting/Procedure	• Setting LAN connect to WAN the net mask address. **NOTE** **• If Auto is selected for “1 IP Address/Auto,” the items of “2 Subnet mask” and “3 Gateway” are automatically set. Key entry is therefore disabled for “2 Subnet mask” and “3 Gateway.”**

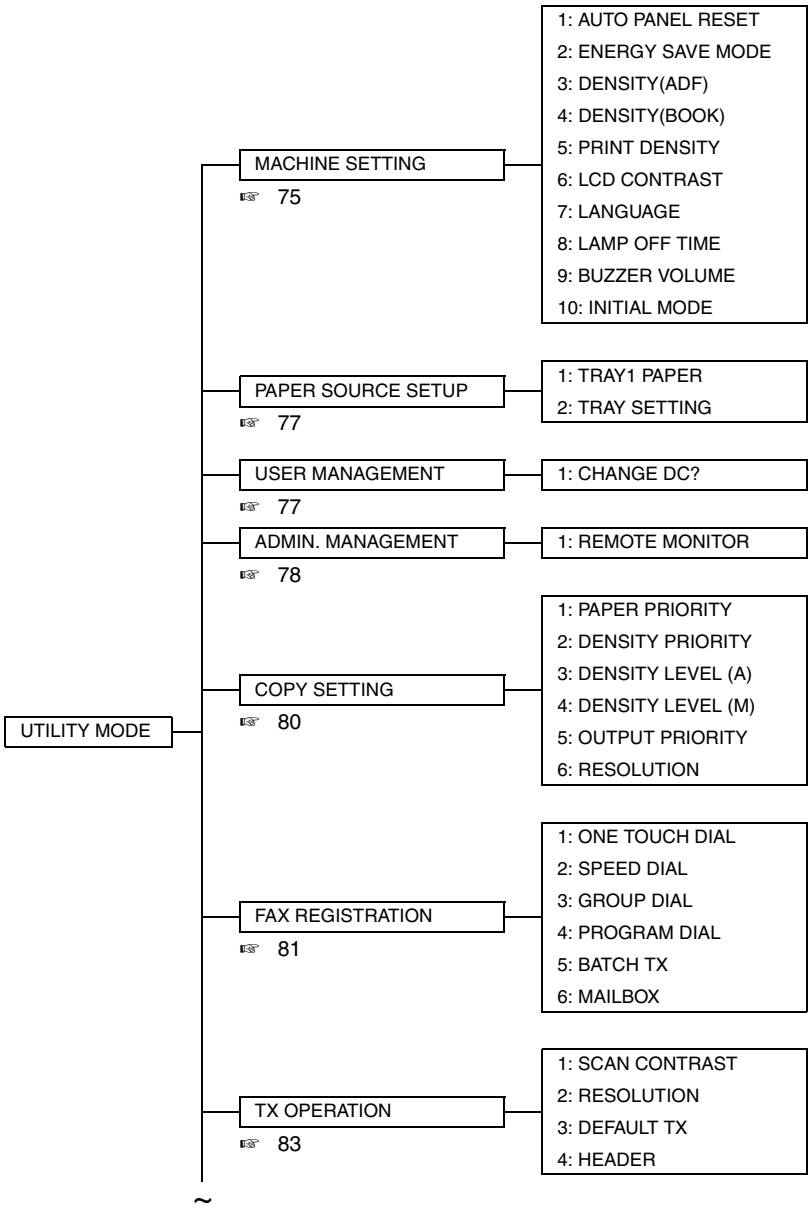
C. GATEWAY

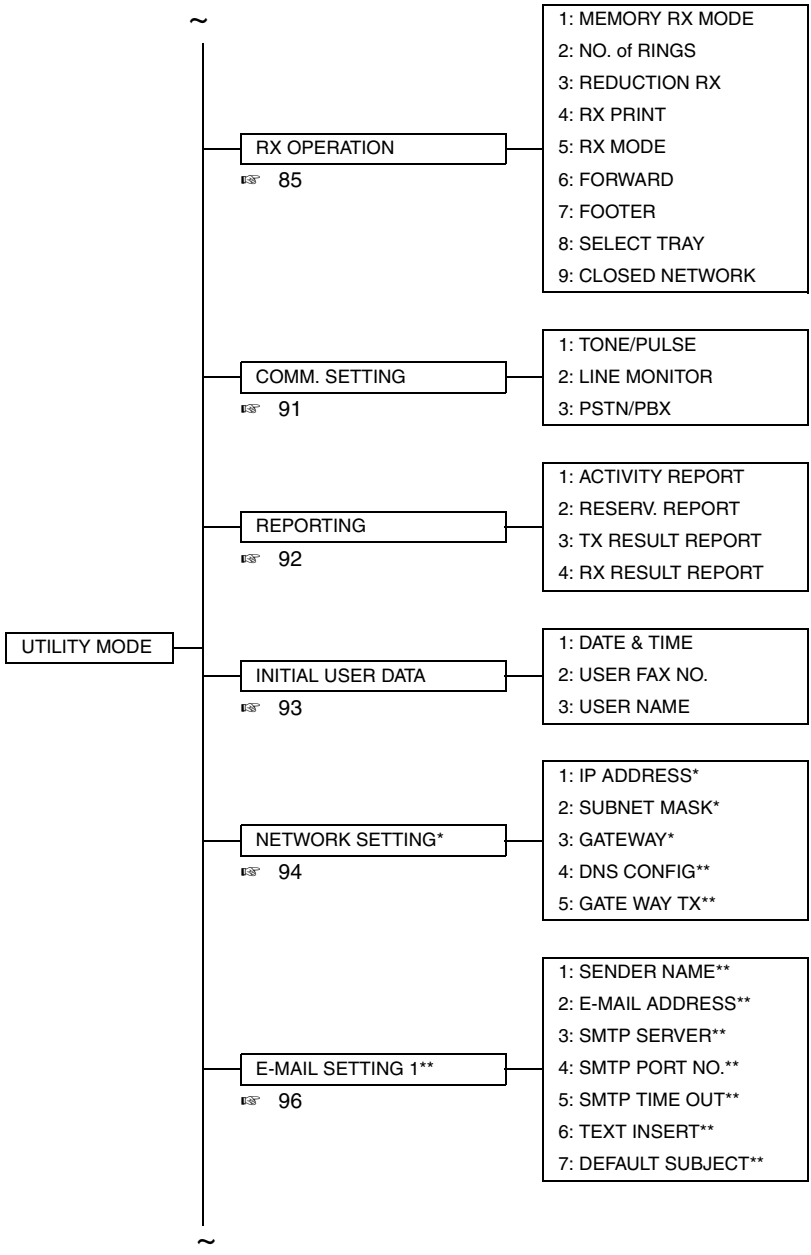
Functions / Use	• This function is used to specify the default gateway (IP address) of a router on the network. **NOTE** **• Available only if the NIC NC-501 is installed.** **• Please consult customer's network administrator for information about the gateway to use.**
Setting/Procedure	• Setting LAN address. **NOTE** **• If Auto is selected for "1 IP Address/Auto," the items of "2 Subnet mask" and "3 Gateway" are automatically set. Key entry is therefore disabled for "2 Subnet mask" and "3 Gateway."**

10. Utility Mode (bizhub 160f/bizhub 161f)

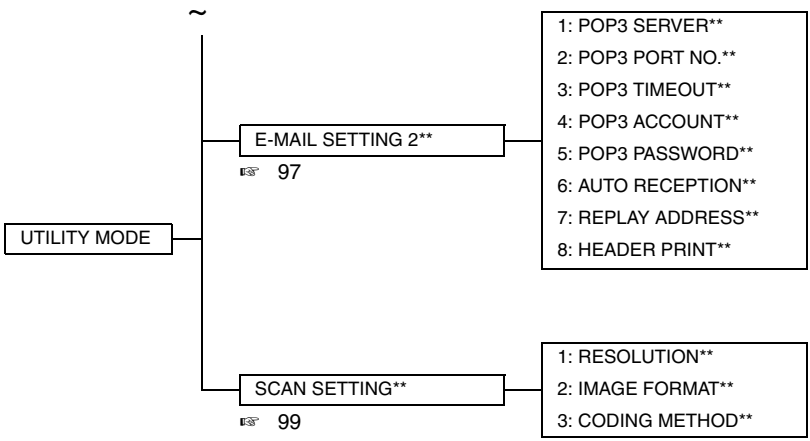
- This mode is used to set various machine functions.

10.1 Utility Mode function tree





*: Available only if the NIC NC-501 is installed.
**: Available only if the Internet Fax & Network Scan Kit SU-502 is installed.



*: Available only if the NIC NC-501 is installed.
**: Available only if the Internet Fax & Network Scan Kit SU-502 is installed.

10.2 Utility Mode setting procedure

10.2.1 Procedure

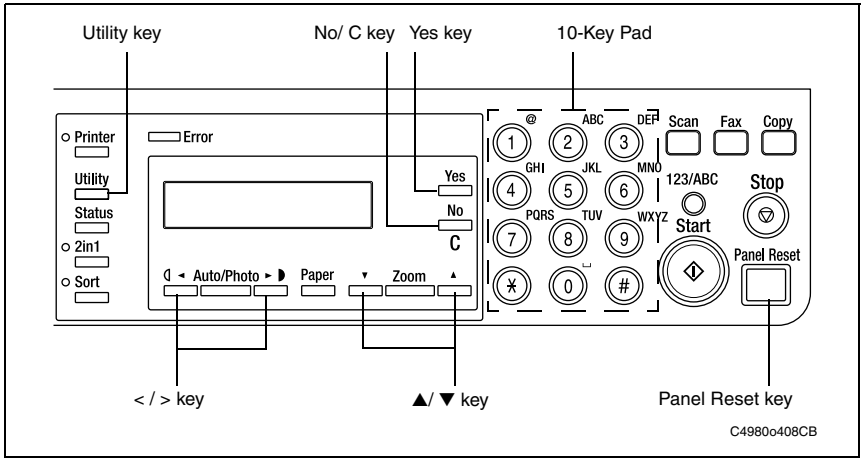
1. Press the Utility key.
2. The first Utility mode screen appears.

10.2.2 Exiting procedure

- Press the Panel Reset key.

10.2.3 Changing the settings for Utility Mode Functions

1. Press the ▲/ ▼ key, < / > key or the 10-Key Pad to select the desired function.
2. Press the ▲/ ▼ key, < / > key or the 10-Key Pad to select the desired setting.
3. Press the Yes key to apply the setting.
4. To return to the previous screen, press the No/ C key.



10.2.4 MACHINE SETTING

- Various settings for the machine's operating environment can be specified.

A. AUTO PANEL RESET

Functions / Use	• To specify the time until the auto panel reset operation is performed after a copy cycle has been completed or after the last key operation.
Setting/Procedure	• The default setting is "1" minute. OFF ON : 0.5 "1" 2 3 4 5 (min)

B. ENERGY SAVE MODE

Functions / Use	• To specify the time until the machine enters Energy Save mode after a copy cycle has been completed or after the last key operation.
Setting/Procedure	• The default setting is "15" minutes. "15" min (1 to 240)

C. DENSITY (ADF)

Functions / Use	• To specify the scanning density when using the Automatic Document Feeder. **NOTE** • **In order to reduce the appearance of spots in copies, the Automatic Document Feeder density level is set for lighter copies as a default.**
Setting/Procedure	• The default setting is "MODE1." "MODE 1" :For a lighter copy density in order to reduce the appearance of spots in copies MODE 2 : For printing copies with the same density as the document

D. DENSITY (BOOK)

Functions / Use	• To specify the scanning density when using the Original Glass.
Setting/Procedure	• The default setting is "MODE1." "MODE 1" : For printing copies with the same density as the document MODE 2 : For a lighter copy density in order to reduce the appearance of spots in copies

E. PRINT DENSITY

Functions / Use	• To specify the default print density.
Setting/Procedure	• The default setting is "0." "0" (-3 to +3)

F. LCD CONTRAST

Functions / Use	• To specify the brightness of the display.
Setting/Procedure	• The default setting is "0." "0" (-1 to +2)

G. LANGUAGE

Functions / Use	• To specify the language of screens.
Setting/Procedure	• The default setting is “ENGLISH.” • The language settings are divided into Type 1 and Type 2. • The Type 1 languages are the standard. Available Languages Type1 “ENGLISH” GERMAN FRENCH ITALIAN DANISH DUTCH SPANISH NORWEGIAN SWEDISH FINNISH TURKISH PORTUGUESE Type2 “ENGLISH” GERMAN FRENCH CZECH HUNGARIAN POLISH ROMANIAN LITHUANIAN SLOVAKIAN

H. LAMP OFF TIME

Functions / Use	• To specify the time until the Exposure Lamp goes off.
Setting/Procedure	• The default setting is “MODE1.” “MODE 1” : When four hours have passed since the last operation was performed MODE 2 : When the machine enters Energy Save mode

I. BUZZER VOLUME

Functions / Use	• To set the volume of alarms and the beep sounded when a key is pressed.
Setting/Procedure	• The default setting is “LOW.” HIGHT “LOW” OFF

J. INITIAL MODE

Functions / Use	• To set the mode (Copy mode or Fax mode) that the machine starts up in or returns to after the Control Panel is reset.
Setting/Procedure	• The default setting is “COPY.” “COPY” FAX

10.2.5 PAPER SOURCE SETUP

- Various settings for the paper tray can be specified.

A. TRAY1 PAPER

Functions / Use	• To specify the type and size of paper loaded into Tray1.
Setting/Procedure	• Default setting of paper type is “PLAIN.” “PLAIN” OHP CARD ENVELOPE • Default setting of paper size depend on the marketing area setting. Metric area : “A4”, Inch area : “LT” A5 B5 A4 FLS 16K HL LT LG **NOTE** **• If “OHP” is selected as the paper type, only “A4” and “LT” are available as paper sizes.** • To specify a custom paper size, type in the size.

B. TRAY SETTING

Functions / Use	• To specify whether or not auto tray switching is enabled for each paper tray.
Setting/Procedure	• The default setting is “CONTINUOUS.” FIXED “CONTINUOUS”

10.2.6 USER MANAGEMENT

- Various functions for use of the machine can be set.

A. CHANGE DC?

Functions / Use	• To clear the I/C COUNTER value.
Setting/Procedure	**NOTE** **• If the Drum Cartridge has been replaced, never fail to use this function to clear the “I/C COUNTER” value.** **• This function has the same effect as “SERVICE MODE/CLEAR DATA/I/C COUNTER.”** ☞ 121

10.2.7 ADMIN. MANAGEMENT

- Various functions for controlling the use of the machine can be set.
- In order to set an “ADMIN. MANAGEMENT” function, the administrator number (ADMIN. NO.) must be entered.

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ADMIN. NO=_ _ _ _ _ _

A. REMOTE MONITOR

Functions / Use	• To set the access right when monitoring a user machine from a remote location on the Service side. • RSD is used for remote monitoring.
Setting/Procedure	• The default setting is “LIMITED.” “LIMITED” FULL OFF LIMITED: • Access right with limited functions. Detailed settings made in the user machine can be monitored. It is, however, not possible to change the user setting or upgrade firmware. FULL: • Access right with no restrictions. In addition to being able to monitor the detailed settings made in the user machine, the Service can change user settings and upgrade firmware. • When “FULL” is selected, the “Remote Monitoring Password” screen will appear. PASSWORD=_ _ _ _ _ _ OK=YES • The Administrator of the user machine sets a 4-digit (0000 to 9999) “Remote Monitoring Password.” • This password is necessary for Remote Monitoring and must be obtained in advance from the Administrator of the user machine. OFF: • Access is prohibited. Remote Monitoring is disabled.

NOTE

Precautions for Changing the Setting of ADMIN. MANAGEMENT/REMOTE MONITOR

If the user machine setting has been changed from "LIMITED" to "FULL" or vice versa while RSD (Remote Setup Diagnostic) communication is established, perform the following operations:

- **Temporarily disconnect the communication and re-execute "Remote Connect."**
- **Press the "Disconnect" key to disconnect the communication.**



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- **The specific changes made in the setting of REMOTE MONITOR are not validated unless the connection is made again.**

< Precautions for Using the RSD (Remote Setup Diagnostic)>

- **When a connection is established with a local machine using the RSD, the following message appears on the Display and no operations can be made from the "Control Panel" of the local machine. Neither the PC print nor Scanner function can be accepted.**



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- **No connection can be made with the RSD during operation from the "Control Panel" of the local machine. Make the connection while no operations are performed on the local machine.**
- **As is the case with the RSD, operations from the "Control Panel" of the local machine, PC print, and Scanner function are not accepted while a connection is being established with the local machine using the LSD (Local Setup Diagnostic) and Page Scope Web Connection/Admin. mode.**
- **As is the case with the RSD, no connection can be made with LSD and Page Scope Web Connection/Admin. mode during operation from the "Control Panel" of the local machine. Make the connection while no operations are performed on the local machine.**

10.2.8 COPY SETTING

- The default settings for each copy function can be specified.

A. PAPER PRIORITY

Functions / Use	• To specify the paper tray that is given priority.
Setting/Procedure	• The default setting is “TRAY1.” “TRAY1” TRAY2

B. DENSITY PRIORITY

Functions / Use	• To specify the image density setting that is selected when the machine is turned on or the Panel Reset key is pressed.
Setting/Procedure	• The default setting is “AUTO.” “AUTO” MANUAL PHOTO

C. DENSITY LEVEL (A)

Functions / Use	• To specify the default density level when the Auto setting is selected.
Setting/Procedure	• The default setting is NORMAL “0.” “0” (-1 to +1)

D. DENSITY LEVEL (M)

Functions / Use	• To specify the default density level when manually setting the image density.
Setting/Procedure	• The default setting is NORMAL “0.” “0” (-4 to +4)

E. OUTPUT PRIORITY

Functions / Use	• To specify the default finishing setting.
Setting/Procedure	• The default setting is “NON.” “NON” SORT

F. RESOLUTION

Functions / Use	• To specify the scanning resolution.
Setting/Procedure	• The default setting is “600×300.” “600×300” 600×600

10.2.9 FAX REGISTRATION

- From the “FAX REGISTRATION” menu, various settings can be specified in order to take advantage of this machine’s many fax functions.

A. ONE-TOUCH DIAL

Functions / Use	• This function can be used to program one-touch dial keys with fax numbers, allowing the recipient to be specified easily and accurately without the need to manually enter the number using the 10-Key Pad. This dialing method is convenient for programming numbers where faxes are frequently sent to.
Setting/Procedure	• A maximum of 15 fax numbers can be programmed. The contents of registration. • Destination name : 20 characters. • Dial No. : 30 digits. • Sub address : 20 digits. • SID : 20 digits. • Modem speed : 33.6 kbps/ 14.4 kbps/ 9.6 kbps • Registered data : Automatically.

B. SPEED DIAL

Functions / Use	• This function can be used to program speed dial numbers with fax numbers, allowing the recipient to be specified easily and accurately without the need to manually enter the number using the 10-Key Pad.
Setting/Procedure	• A maximum of 200 fax numbers (001 to 200) can be programmed. The contents of registration. • Destination name : 20 characters. • Dial No. : 30 digits. • Sub address : 20 digits. • SID : 20 digits. • Modem speed : 33.6 kbps/ 14.4 kbps/ 9.6 kbps • Registered data : Automatically.

C. GROUP DIAL

Functions / Use	• This function can be used to program a single one-touch dial key with a maximum of 50 different fax numbers as one group. Programming a one-touch dial key with a group of fax numbers is convenient when documents are frequently sent to a set group of multiple recipients.
Setting/Procedure	The contents of registration. • Group name : 20 characters. • Information of destination station : The contents of one-touch or speed dial.

D. PROGRAM DIAL

Functions / Use	• This function can be used to program one-touch dial keys (No. 12 to 15) with fax numbers and a transmission/reception function (such as timer transmission or polling reception), allowing that function to be carried out by pressing just the corresponding one-touch dial key.
Setting/Procedure	• If one-touch dial keys have been programmed with fax numbers and a transmission/reception function, that function can be carried out by pressing just the corresponding one-touch dial key. • The function of registration

Function No.	Function	Description
1	BROADCAST	Up to 50 detection
2	TIMER TX	-
3	MAIBOX TX	-
6	POLLING RX	Up to 50 detection
7	RELEY INITIATE	-

E. BATCH TX

Functions / Use	• This function can be used to specify the batch transmission setting (transmission time) for a one-touch dial key programmed with recipient fax numbers, so multiple documents can be stored in the memory and sent out together at the specified time.
Setting/Procedure	• If the batch transmission setting (transmission time) is specified for a one-touch dial key programmed with recipient fax numbers, multiple documents can be stored in the memory and sent out together at the specified time. • A one-touch dial key must first be programmed with the fax number of the recipient for the batch transmission. • Cannot set for e-mail address.

F. MAILBOX

Functions / Use	• This function can be used to specify mailbox IDs in order to receive faxes with mailbox reception only if the mailbox ID sent by the caller matches the mailbox ID set on this machine.
Setting/Procedure	• Mailbox IDs must first be specified in order to receive faxes with mailbox reception only if the mailbox ID sent by the caller matches the mailbox ID set on this machine. • A mailbox ID cannot be the same as a relay box ID. • Setting value : 0000 to 9999 • Password : Setting range 0 to 9999, or none.

10.2.10 TX OPERATION

- From the “TX OPERATION” menu, various functions for sending faxes can be set.

A. SCAN CONTRAST

Functions / Use	• This function can be used to set the default scanning contrast level to one of five settings between “LIGHT” and “DARK.” For dark-colored paper (media), select a setting towards “LIGHT.” For faint or colored text, select a setting toward “DARK.”
Setting/Procedure	• The default setting is “0.”

Setting value	Description
-2	 4980S506AA
-1	 4980S505AA
“0”	 4980S502AA
+1	 4980S503AA
+2	 4980S504AA

B. RESOLUTION

Functions / Use	• This function can be used to set the default scanning resolution (image quality) to one of the following: “Standard”, “Fine”, “Super Fine”, “Half Tone + Standard”, “Half Tone + Fine” or “Half Tone + Super Fine.”
Setting/Procedure	• The default setting is “STD.” • The resolution when transmission image mode is Text. “STD”: Standard FINE : Fine S/F : Super Fine H/T : Half Tone -> to the resolution when transmission image mode is half-tone.

C. DEFAULT TX

Functions / Use	• This function can be used to set the default setting (ON or OFF) for adding the header (date sent, sender's name and fax number, etc.) when sending faxes.
Setting/Procedure	• The default setting is “MEM.TX.” “MEM TX” : Memory Transmission ADF TX : Direct transmission

D. HEADER

Functions / Use	• This function can be used to specify mailbox IDs in order to receive faxes with mailbox reception only if the mailbox ID sent by the caller matches the mailbox ID set on this machine.
Setting/Procedure	• The default setting is “ON.” “ON” : Add header OFF : No header The contents of registration. • TX data and time. • Transmitter’s own name. • Transmitter’s own tel number. • Session number. • Page number. • Total page number (only displayed by use the memory TX job). • It is selectable by soft switch to transmit only pages which have failed to transmit, if communication error occurs on the way transmitting document. In this case, page number on Header Print is continued from the page number of the document successfully transmitted. Whether user setting is allowed or not is selectable with Soft switch. • For North America, Header print is set ON, and setting change to OFF by the user is not allowed. • Attaching Header Print: Image within 4 mm (1/4 in.) top margin of transmitting document is not transmitted and Header print data is attached.

10.2.11 RX OPERATION

- From the RX OPERATION menu, various functions for receiving faxes can be set.

A. MEMORY RX MODE

Functions / Use	• This function can be used to set whether to allow (“ON”) memory reception or not (“OFF”). In cases when confidential faxes are being received, the received document can be stored in the memory and printed at a specified time or when memory reception is set to “OFF.” A password can be set to specify the starting time or ending time of memory reception, or to cancel the function.The set starting time and ending time are valid every day until memory reception is turned off.
Setting/Procedure	• The default setting is “OFF.” ON : Enable memory RX mode “OFF” : Disable memory RX mode

B. No. of RINGS

Functions / Use	• This function can be used to set the number of rings between 1 and 16 until the call is answered.
Setting/Procedure	• The default setting is “2” (marketing area: standard). • Depend on soft switch setting of marketing area. 1 : Once “2” : Twice 3 : 3 times 4 : 4 times 5 : 5 times 6 : 6 times 7 : 7 times 8 : 8 times 9 : 9 times 10 : 10 times 11 : 11 times 12 : 12 times 13 : 13 times 14 : 14 times 15 : 15 times 16 : 16 times **NOTE** • **A fax to be received is cancelled and the machine becomes unable to receive it if the setting of “No. of RINGS” is made longer than the setting of “CNG duration after dialing.”** **Be sure to make the “No. of RINGS” setting to a value shorter than the “CNG duration after dialing” setting.** ☞ 199 : SOFT SWITCH/ #21/ Bit No. 6-7: CNG duration after dialing

C. REDUCTION RX

Functions / Use	• This function can be used to set whether documents longer than the paper are printed reduced (“ON”), split (“OFF”), or discarded (“CUT”). However, when sending a document more than 24 mm (1 in.) longer than the paper, “CUT” is not available. (In this case, the document is split.)
Setting/Procedure	• The default setting is “ON.” “ON” : Reduction print mode OFF : 100 % RX mode CUT : Cut mode

(1) Reduction print mode

Recording paper size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page with 100 %
		290 mm to 385 mm	1 page with (289 mm / image length)% reduction
		386 mm to 570 mm	Divide into 2 pages with 100 %
		571 mm to 851 mm	Divide into 3 pages with 100 %
		851 mm or more	Divide into 3 pages (or more) with 100 %
	ON	Less than 285 mm	1 page with 100 %
		286 mm to 381 mm	1 page with (285 mm / image length)% reduction
		382 mm to 562 mm	Divide into 2 pages with 100 %
		563 mm to 839 mm	Divide into 3 pages with 100 %
		840 mm or more	Divide into 3 pages (or more) with 100 %
Letter	OFF	Less than 271 mm	1 page with 100 %
		272 mm to 387 mm	1 page with (271 mm / image length)% reduction
		388 mm to 534 mm	Divide into 2 pages with 100 %
		535 mm to 797 mm	Divide into 3 pages with 100 %
		798 mm or more	Divide into 3 pages (or more) with 100 %
	ON	Less than 267 mm	1 page with 100 %
		268 mm to 381 mm	1 page with (267 mm / image length)% reduction
		382 mm to 526 mm	Divide into 2 pages with 100 %
		527 mm to 785 mm	Divide into 3 pages with 100 %
		786 mm or more	Divide into 3 pages (or more) with 100 %
Legal	OFF	Less than 347 mm	1 page with 100 %
		348 mm to 385 mm	1 page with (347 mm / image length)% reduction
		386 mm to 686 mm	Divide into 2 pages with 100 %
		687 mm to 1025 mm	Divide into 3 pages with 100 %
		1,026 mm or more	Divide into 3 pages (or more) with 100 %
	ON	Less than 343 mm	1 page with 100 %
		344 mm to 381 mm	1 page with (343 mm / image length)% reduction
		382 mm to 678 mm	Divide into 2 pages with 100 %
		679 mm to 1013 mm	Divide into 3 pages with 100 %
		1,014 mm or more	Divide into 3 pages (or more) with 100 %

(2) 100 % RX mode

- All receiving data is divided into 2 pages or more, and is printed.

Recording paper size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page
		290 mm to 570 mm	Divide into 2 pages
		571 mm to 851 mm	Divide into 3 pages
		852 mm or more	Divide into 4 pages or more
	ON	Less than 285 mm	1 page
		286 mm to 562 mm	Divide into 2 pages
		563 mm to 839 mm	Divide into 3 pages
		840 mm or more	Divide into 4 pages or more
Letter	OFF	Less than 271 mm	1 page
		272 mm to 534 mm	Divide into 2 pages
		535 mm to 797 mm	Divide into 3 pages
		798 mm or more	Divide into 4 pages or more
	ON	Less than 267 mm	1 page
		268 mm to 526 mm	Divide into 2 pages
		527 mm to 785 mm	Divide into 3 pages
		786 mm or more	Divide into 4 pages or more
Legal	OFF	Less than 348 mm	1 page
		349 mm to 688 mm	Divide into 2 pages
		689 mm to 1,028 mm	Divide into 3 pages
		1,029 mm or more	Divide into 4 pages or more
	ON	Less than 344 mm	1 page
		345 mm to 680 mm	Divide into 2 pages
		681 mm to 1,016 mm	Divide into 3 pages
		1,017 mm or more	Divide into 4 pages or more

(3) Cut mode

- The data that is larger than 1-page record area is cut and not recorded (to 18 mm).

Recording paper size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page
		290 mm to 313 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		314 mm to 570 mm	Divide into 2 pages
		571 mm to 594 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		595 mm to 851 mm	Divide into 3 pages
		852 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 285 mm	1 page
		286 mm to 309 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		310 mm to 562 mm	Divide into 2 pages
		563 mm to 586 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		587 mm to 839 mm	Divide into 3 pages
		840 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Letter	OFF	Less than 271 mm	1 page
		272 mm to 295 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		296 mm to 534 mm	Divide into 2 pages
		535 mm to 558 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		559 mm to 797 mm	Divide into 3 pages
		798 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 267 mm	1 page
		268 mm to 291 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		292 mm to 526 mm	Divide into 2 pages
		527 mm to 550 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		510 mm to 785 mm	Divide into 3 pages
		786 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Legal	OFF	Less than 347 mm	1 page
		348 mm to 371 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		372 mm to 686 mm	Divide into 2 pages
		687 mm to 710 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		711 mm to 1,025 mm	Divide into 3 pages
		1,026 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 343 mm	1 page
		344 mm to 367 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		368 mm to 678 mm	Divide into 2 pages
		679 mm to 702 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		703 mm to 1,13 mm	Divide into 3 pages
		1,014 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.

D. RX PRINT

Functions / Use	• This function can be used to set whether the fax is only printed after all document pages have been received (“MEMORY RX”) or printing begins as soon as the first page of the document is received (“PRINT RX”).
Setting/Procedure	• The default setting is “MEMORY RX.” “MEMORY RX” : Printed after all document pages have been received. PRINT RX : Printing begins as soon as the first page of the document is received.

E. RX MODE

Functions / Use	• This function can be used to set the reception mode to automatic reception (“AUTO RX”) or manual reception (“MANUAL RX”). • Automatic reception : Automatically begins receiving after the set number of rings. • Manual reception : Does not automatically receive the fax. Reception begins after making a connection by picking up the telephone receiver or pressing the Speaker key, then pressing the Start key.
Setting/Procedure	• The default setting is “AUTO RX.” “AUTO RX” : Automatic reception MANUAL RX : Manual reception

F. FORWARD

Functions / Use	• This function can be used to set whether or not the received document is forwarded. • Forward (“ON”) : The received document is forwarded to the specified fax number or e-mail address. • Forward and print (“ON (PRINT)”) : The received document is printed by this machine at the same time that it is forwarded to the specified fax number or e-mail address. • Do not forward (“OFF”) : The document is not forwarded.
Setting/Procedure	• The default setting is “OFF.” ON : Add forward “OFF” : No forward

G. FOOTER

Functions / Use	• This function can be used to set whether or not the reception information (RX data and time, RX management number, RX page number, Transmitter's ID) is printed at the bottom of each received document.
Setting/Procedure	• The default setting is "OFF." ON : Add footer "OFF" : No footer

- Attaching footer print:
  When Footer is selected ON, it is printed at the end of printable area. 4mm line area from the end of printable area is kept for printing Footer. It should be attached on Footer area regardless of image length. If the received image is divided into 2 pages or more, Footer is printed in the specified location of all the recording sheets of paper printed.
- Image data area:
  The received image data is printed on the area except for 12mm from recording paper size. (No printable area: 8mm (1/3 in) + Footer area: 4mm (1/4 in)) The following table is the image printable area of each recording paper size due to setting of Footer Print.

Paper length		Footer off	Footer on	
		Image data area	Image data area	Footer area
A4	297 mm	289 mm	285 mm	+4 mm (1/4 in)
Letter	279 mm	271 mm	267 mm	+4 mm (1/4 in)
Legal	356 mm	348 mm	344 mm	+4 mm (1/4 in)

H. SELECT TRAY

Functions / Use	• This function can be used to select which paper tray can be used to supply paper when printing received documents or transmission reports. (A paper tray that cannot be used for supplying paper can also be specified.) • This function is only available when an optional paper tray is installed.
Setting/Procedure	• The default setting is "Enable." Tray1 : "Enable" Disable Tray2 : "Enable" Disable • A non-equipped cassette is not displayed. When setting value is determined, reception setting of utility menu is indicated. This setting has effect on RX print and Report print.

I. CLOSED NETWORK

Functions / Use	• This function can be used to set whether or not the fax is received if the sender's fax number does not match the fax number programmed in this machine's one-touch dial keys.
Setting/Procedure	• The default setting is “OFF.” ON : Enable closed network reception “OFF” : Disable closed network reception

10.2.12 COMM. SETTING

- From the “COMM.SETTING” menu, various functions are available for specifying communication settings.

A. TONE/ PULSE

Functions / Use	• This function can be used to specify the dialing system. If this function is not correctly set to the type of dialing system used, faxes cannot be sent. Select the correct setting after checking which type of dialing system is used by your telephone line. • There are two types of telephone dialing systems: tone dialing (PB) and pulse dialing (DP10pps or DP20pps). Faxes cannot be sent if this machine is not set to the system used by your telephone line. Select the correct setting after checking which type of dialing system is used.
Setting/Procedure	• The default setting is “TONE.” “TONE” : Tone line PULSE 10pps : Pulse line of 10 pps PULSE 20pps : Pulse line of 20 pps

B. LINE MONITOR

Functions / Use	• This function can be used to set the volume when monitoring communication to “HIGH”, “LOW” or “OFF.” • Usual TX/ RX (Start) : Pressing Start key following pressing ten-key. Pressing Start key following pressing Speed dial. Pressing One-touch key. Pressing Redial key. • Usual TX/ RX (End) : After receiving V21 signal. • Using Speaker key (Start) : Just after pressing Speaker key. • Using Speaker key (End) : Just after pressing Speaker key
Setting/Procedure	• The default setting is “LOW.” HIGE --- Usual TX/ RX : High, Usual SPEAKER key : High “LOW” --- Usual TX/ RX : Low, Usual SPEAKER key : Low OFF --- Usual TX/ RX : Off, Usual SPEAKER key : Low

C. PSTN/ PBX

Functions / Use	• This function can be used to set whether the connected telephone wiring is a public switched telephone network (PSTN) or a private branch exchange (PBX). For a PBX system, the outside line access number (or extension number) must be specified. • The connected wiring system can be set to either PSTN (Public Switched Telephone Network) or PBX (Private Branch Exchange). For a PBX system, the outside line access number (or extension number) must be specified. The outside line access number (or extension number) is programmed in the [#] key.
Setting/Procedure	• The default setting is “PSTN.” “PSTN” : Public Switched Telephone Network PBX : Private Branch Exchange

10.2.13 REPORTING

- From the “REPORTING” menu, various functions are available for specifying which reports are automatically printed.

A. ACTIVITY REPORT

Functions / Use	• Every 60 transmissions/receptions, a report can be printed to show the results of the transmissions/receptions. This function can be used to set whether the report is printed automatically when the 60th transmission/ reception is reached.
Setting/Procedure	• The default setting is “ON.” “ON” OFF

B. RESERV.REPORT

Functions / Use	• If multiple recipients are specified for transmission, such as with broadcast transmission and polling reception, a report can be printed to show specified settings. This function can be used to set whether this report is printed automatically.
Setting/Procedure	• The default setting is “OFF.” ON “OFF”

C. TX RESULT REPORT

Functions / Use	• This function can be used to set whether the report showing the result of a transmission is printed automatically after the transmission is finished.
Setting/Procedure	• The default setting is “OFF.” ON “OFF”

D. RX RESULT REPORT

Functions / Use	• This function can be used to set whether the report showing the result of a reception is printed automatically after mailbox reception is finished. (If regular reception is not finished normally, a report will always be printed, regardless of the selected setting.)
Setting/Procedure	• The default setting is “OFF.” ON “OFF”

10.2.14 INITIAL USER DATA

- Various settings for the machine's user data can be specified.

A. DATE & TIME

Setting value	Description
Hour	00 to 23
Minute	00 to 59
Year	00 to 99 (2000 to 2099 will be meant)
Month	01 to 12
Day	01 to 28, 29, 30, 31
Time Zone	-12 hour to +12hour, interval: 30 minute.

B. USER FAX No.

Functions / Use	• User fax number is set to TSI (Transmitting Station Identification), CSI (Called Subscriber Identification) during communication. A symbol is printed on header and Status list, but only figure is set to TSI, CSI signal. This is checked with the communication permission ID registered at destination station in case of Closed network.
Setting/Procedure	• Max. 20 digits. • The characters which can be inputted are "numbers from 0 to 9", "Space", "+" and "-."

C. USER NAME

Functions / Use	• The User Name is used for the indication of destination station at the time of the communication between same models.
Setting/Procedure	• Maximum 32 digits character can be inputted.

10.2.15 NETWORK SETTING

- Depending on the network environment in which the machine is located, there may be some restrictions on the network functions that the machine can use. Make the network settings to suit the functions and environment required for customer's location. The network settings can be specified from the control panel or using the administrator mode of Page Scope Web Connection.

A. IP ADDRESS

Functions / Use	• This function is used to specify the IP address for the copier. **NOTE** **• Available only if the NIC NC-501 is installed.** **• Please consult customer's network administrator for information about the IP address to use.**
Setting/Procedure	• The default setting is "AUTO." "AUTO" SPECIFY • If "AUTO" is selected, the IP address is automatically acquired from the DHCP server. **NOTE** **• AUTO is only enabled if there is a DHCP server available on the network.** **• When IP address cannot be acquired from the DHCP server, IP address is acquired by the "Auto-IP function."** **• When AUTO is selected, there is no need to set the subnet mask or gateway setting. When using a fixed IP address, IP Address in NVRAM must be selected for Page Scope Web Connection.** **• Select this option from the "TCP/IP Configuration" menu on the "Network" tab.** • If SPECIFY is selected, the screen for entering the IP address appears.

B. SUBNET MASK

Functions / Use	• This function is used to specify the subnet mask value for the network. **NOTE** **• Available only if the NIC NC-501 is installed.** **• Please consult customer's network administrator for information about the subnet mask to use.**
Setting/Procedure	• Setting LAN connect to WAN the net mask address. **NOTE** **• If Auto is selected for "1 IP Address/Auto," the items of "2 Subnet mask" and "3 Gateway" are automatically set. Key entry is therefore disabled for "2 Subnet mask" and "3 Gateway."**

C. GATEWAY

Functions / Use	• This function is used to specify the default gateway (IP address) of a router on the network. **NOTE** **• Available only if the NIC NC-501 is installed.** **• Please consult customer's network administrator for information about the gateway to use.**
Setting/Procedure	• Setting LAN address. **NOTE** **• If Auto is selected for "1 IP Address/Auto," the items of "2 Subnet mask" and "3 Gateway" are automatically set. Key entry is therefore disabled for "2 Subnet mask" and "3 Gateway."**

D. DNS CONFIG.

Functions / Use	• This function is used to enable or disable the DNS (Domain Name System) setting. If there is a DNS server on your network, enter the IP address of the DNS server. • *If the DNS server is located within your local network, select Enable. If you are using the DNS server of an Internet service provider (ISP) or some other DNS server located outside your local network, select Disable. **NOTE** **• Available only if the Internet Fax & Network Scan Kit SU-502 is installed.** **• Please consult customer's network administrator for details.**
Setting/Procedure	• The default setting is "DISABLE." "DISABLE" ENABLE • If DISABLE is selected, the NETWORK SETTING screen appears. • If ENABLE is selected, the screen for entering the IP address of the DNS server appears.

E. GATEWAY TX

Functions / Use	• This function is used to enable the Direct Fax function. **NOTE** **• Available only if the Internet Fax & Network Scan Kit SU-502 is installed.**
Setting/Procedure	• The default setting is "DISABLE." "DISABLE" ENABLE

10.2.16 E-MAIL SETTING 1

- Available only if the Internet Fax & Network Scan Kit SU-502 is installed.
- Depending on the network environment in which the machine is located, there may be some restrictions on the network functions that the machine can use. Make the network settings to suit the functions and environment required for customer's location. The network settings can be specified from the control panel or using the administrator mode of Page Scope Web Connection.

A. SENDER NAME

Functions / Use	• This function is used to specify the sender's name.
Setting/Procedure	• Up to 20 characters can be entered for the sender name.

B. E-MAIL ADDRESS

Functions / Use	• This function is used to specify the e-mail address of the sender. **NOTE** • **Please consult customer's network administrator for information about the e-mail address to use.**
Setting/Procedure	• Up to 64 characters can be entered for the sender address. • If customer does not receive e-mail on the copier, enter the e-mail address of the customer's administrator.

C. SMTP SERVER

Functions / Use	• This function is used to enter the IP address or host name of an SMTP server. **NOTE** • **Please consult customer's network administrator for information about the IP address to use.**
Setting/Procedure	• Up to 64 characters can be entered for the host name. • The DNS settings must have been specified before specifying the host name for the SMTP server.

D. SMTP PORT NO.

Functions / Use	• This function is used to enter the port number (1 to 65535) for the SMTP server. **NOTE** • **Please consult customer's network administrator for information about the port number to use.**
Setting/Procedure	• The port number can be set between 1 and 65535. • Normally, port number 25 is used.

E. SMTP TIMEOUT

Functions / Use	• This function is used to specify the length of time (in seconds) before the connection to the SMTP server times out. (30 to 300 seconds)
Setting/Procedure	• The default setting is "60" second. "60" sec (30 to 300)

F. TEXT INSERT

Functions / Use	• This function is used to specify whether or not to insert text explaining that an image has been attached to an e-mail message, when sending scan data as an E-mail attachment.
Setting/Procedure	• The default setting is "OFF." ON : If ON is selected, the following text is inserted in the e-mail message. "OFF" : If OFF is selected, a blank e-mail message will be sent. **NOTE** • **Image data (TIFF format) has been attached to the E-mail. We recommend you use a program like "Imaging for Windows" to view the file**.

G. DEFAULT SUBJECT

Functions / Use	• This function is used to specify the default subject line, when sending scan data as an e-mail attachment.
Setting/Procedure	• Up to 20 characters can be entered for the default subject.

10.2.17 E-MAIL SETTING 2

- Available only if the Internet Fax & Network Scan Kit SU-502 is installed.
- Depending on the network environment in which the machine is located, there may be some restrictions on the network functions that the machine can use. Make the network settings to suit the functions and environment required for customer's location. The network settings can be specified from the control panel or using the administrator mode of Page Scope Web Connection.

A. POP3 SERVER

Functions / Use	• This function is used to enter the IP address or host name of an POP3 server. **NOTE** • **Please consult customer's network administrator for information about the IP address to use.**
Setting/Procedure	• Up to 64 characters can be entered for the host name. • The DNS settings must have been specified before specifying the host name for the POP3 server.

B. POP3 PORT NO.

Functions / Use	• This function is used to enter the port number (1 to 65535) for the POP3 server. **NOTE** • **Please consult customer's network administrator for information about the port number to use.**
Setting/Procedure	• The port number can be set between 1 and 65535. • Normally, port number 110 is used.

C. POP3 TIMEOUT

Functions / Use	• This function is used to specify the length of time (in seconds) before the connection to the POP3 server times out. (30 to 300 seconds)
Setting/Procedure	• The default setting is “60” second. “60” sec (30 to 300)

D. POP3 ACCOUNT

Functions / Use	• This function is used to enter the account name used to log on to the POP3 server. **NOTE** • **Please consult customer’s network administrator for information about the account name to use.**
Setting/Procedure	• Up to 64 characters can be entered for the account name.

E. POP3 PASSWORD

Functions / Use	• This function is used to enter the password associated with the account name used to log in to the POP3 server. **NOTE** • **Please consult customer’s network administrator for information about the password to use.**
Setting/Procedure	• Up to 32 characters can be entered for the password.

F. AUTO RECEPTION

Functions / Use	• This function is used to specify the time interval (in minutes) for checking E-mail, when Auto Reception is enabled. (0 minutes: OFF, 1 to 60 minutes)
Setting/Procedure	• The default setting is “OFF.” ON “OFF” • If ON is selected, the screen used to specify the time interval for checking e-mail appears. The time interval for automatically checking for new e-mail can be set between 1 minute and 60 minutes. The default setting is “15 minutes.” • If OFF is selected, the E-MAIL SETTING 2 screen appears again.

G. REPLAY ADDRESS

Functions / Use	• This function is used to enter the e-mail address to be used when sending notification of an error, if an error occurs while receiving an Internet fax.
Setting/Procedure	• Up to 64 characters can be entered for the reply address. • Normally, the reply address is set to the e-mail address of the customer's administrator.

H. HEADER PRINT

Functions / Use	• This function is used to specify whether or not to print header information when printing E-mails that have been received.
Setting/Procedure	• The default setting is “OFF.” ON : Printing cover page & attachment file. “OFF” : Only printing attachment file.

10.2.18 SCAN SETTING

- Available only if the Internet Fax & Network Scan Kit SU-502 is installed.
- The scan settings can be specified from the control panel or using the administrator mode of Page Scope Web Connection.

A. RESOLUTION

Functions / Use	• The default settings for resolution used by the Scan to E-mail and Scan to Server (FTP) functions can be specified.
Setting/Procedure	• The default setting is “300 × 300” dpi. 150 × 150 dpi : Normal resolution for text documents containing standard sized text. “300 × 300” dpi : Higher resolution for text documents containing small characters or fine print, such as a newspaper article. 600 × 600 dpi : Highest resolution for scanning photographs and other images

B. IMAGE FORMAT

Functions / Use	• The default settings for data format used by the Scan to E-mail and Scan to Server (FTP) functions can be specified.
Setting/Procedure	• The default setting is “TIFF.” “TIFF” PDF • TIFF : Tagged Image File Format, The image is not compressed. Images are clearer than the image data of the PDF form. • PDF : Portable Document Format, The image is compressed. The data size becomes small compared with the image data of the TIFF form.

C. CODING METHOD

Functions / Use	• The default settings for coding method, used by the Scan to E-mail and Scan to Server (FTP) functions can be specified.
Setting/Procedure	• The default setting is “MH.” “MH” : Modified Huffmann. MR : Modified Read, 50% faster than MH. MMR : Modified Modified Read, 50% faster than MR.

11. Adjustment item list

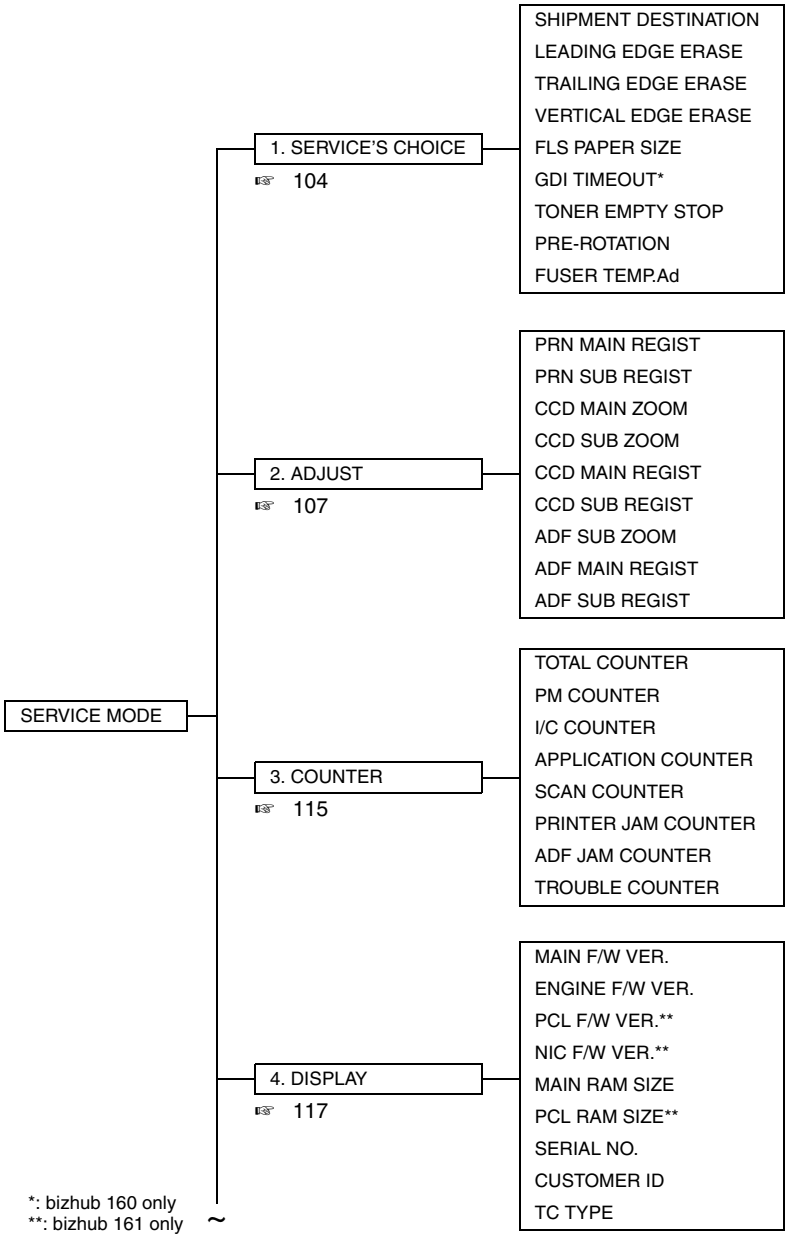
Adjustment/Setting Items		Replacement Part/Service Job	No	Replace Image Transfer Roller	Replace Fusing Unity	Replace Drum Cartridge	Replace Paper Take-up parts	Replace Scanner Assy.	Removal Original Glass	Replace PWB-P	Replace PH Unit	Execute Memory Clear	Execute F/W update	Replace ADF Paper Separator Pad
Service Mode	Service Choice	Re-entry of Service Choice settings	1									(1)		
		Edge Erase (Leading, Trailing, Vertical)	2								(1)			
	Adjust	PRN Main Regist	3								(2)			
		PRN Sub Regist	4								(3)			
		CCD Main Zoom	5					(1)						
		CCD Sub Zoom	6					(2)						
		CCD Main Regist	7					(3)	(1)					
		CCD Sub Regist	8					(4)	(2)					
		ADF Sub Zoom	9					(5)	(3)					
		ADF Main Regist	10					(6)	(4)					
		ADF Sub Regist	11					(7)	(5)					
	Counter	PM Counter check (return to 0)	12	(2)	(2)									
		I/C Counter check (return to 0)	13			(2)								
	Display	F/W Version Check	14										❍	
	Function	Paper Feed Test	15				❍							
		ADF Feed Test	16											❍
	Soft Switch	Re-entry of Soft Switch	17									(4)		
	Clear Data	PM Counter	18	(1)	(1)									
		I/C Counter	19			(1)								
Re-entry of Utility settings			20									(3)		
Re-entry of Security settings			21									(2)		
F/W upgrading			22							(2)				
Remounting of EEPROM (PWB-P)			23							(1)				

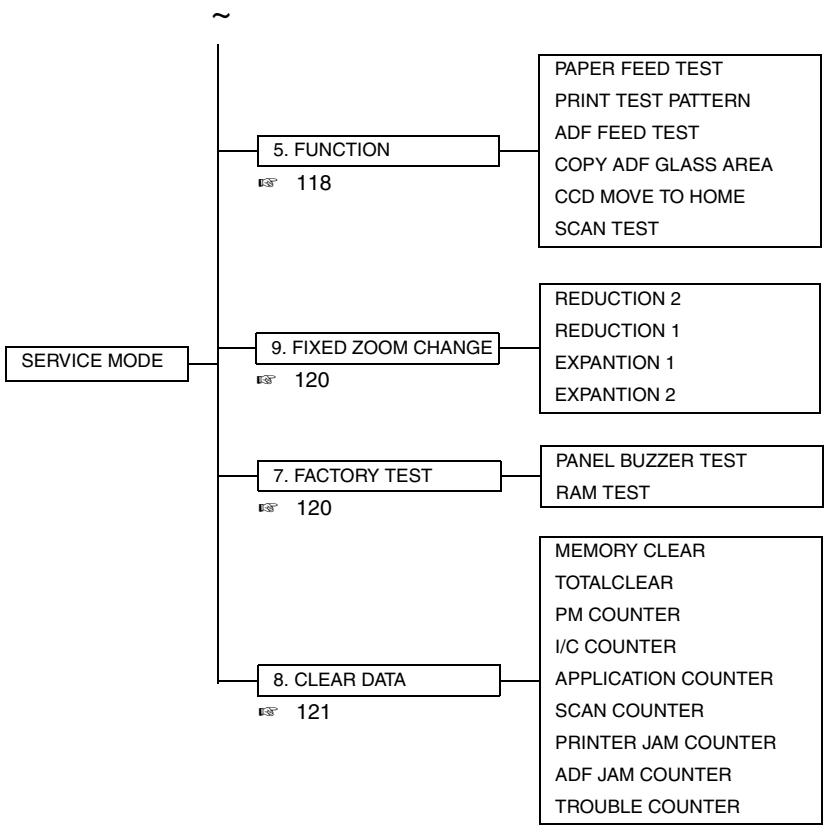
- This table shows the adjustment items that are required when a part of the machine has been replaced. Priority order, if applicable, during the adjustment procedures is indicated by the corresponding number in the parentheses.

12. Service Mode (bizhub 160/bizhub 161)

- This mode is used to check, specify, adjust and register service functions.

12.1 Service Mode function tree




~
SERVICE MODE
5. FUNCTION
☞ 118
PAPER FEED TEST
PRINT TEST PATTERN
ADF FEED TEST
COPY ADF GLASS AREA
CCD MOVE TO HOME
SCAN TEST
9. FIXED ZOOM CHANGE
☞ 120
REDUCTION 2
REDUCTION 1
EXPANTION 1
EXPANTION 2
7. FACTORY TEST
☞ 120
PANEL BUZZER TEST
RAM TEST
8. CLEAR DATA
☞ 121
MEMORY CLEAR
TOTALCLEAR
PM COUNTER
I/C COUNTER
APPLICATION COUNTER
SCAN COUNTER
PRINTER JAM COUNTER
ADF JAM COUNTER
TROUBLE COUNTER

12.2 Service Mode setting procedure

NOTE

- **Be sure to keep the access procedure for the Service mode from any unauthorized persons not involved with service operations.**

12.2.1 Procedure

1. Press the Utility key.
2. Press the following keys in this order to enter the Service Mode.
   Stop → 0 → 0 → Stop → 0 → 1
3. The first Service mode screen appears.

12.2.2 Exiting procedure

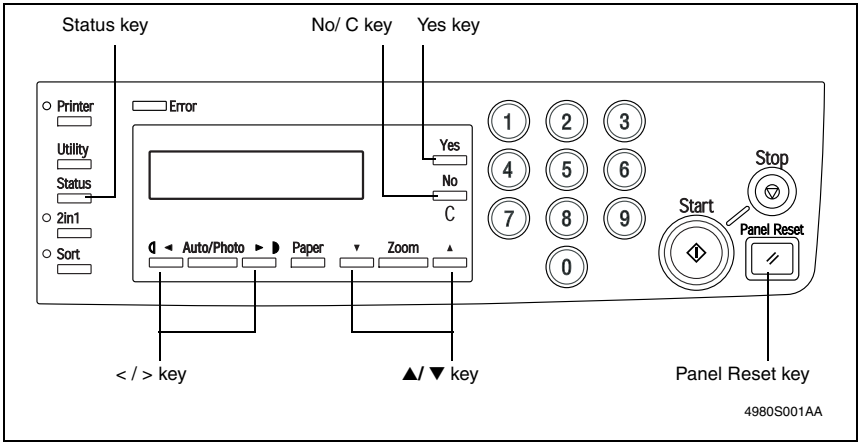
- Press the Panel Reset key.

12.2.3 Changing the settings for Service Mode functions

1. Press the ▲/ ▼ key to select the desired function.
2. Press the ▲/ ▼ key, < / > key or the 10-Key Pad to select the desired setting.
3. Press the Yes key to apply the setting.
4. To return to the previous screen, press the No/ C key.

NOTE

- **In order for the settings for the Service mode functions to be changed, the machine must be turned off, then on again.**



12.3 Service Mode functions

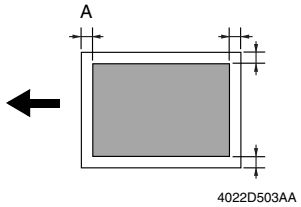
12.3.1 SERVICE'S CHOICE

- Various machine service functions can be specified.

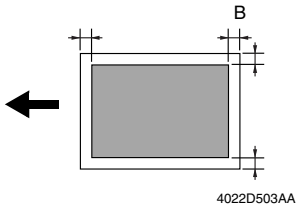
A. SHIPMENT DESTINATION

Functions / Use	• To switch the fixed zoom ratios and paper sizes according to the selected marketing area.
Setting/Procedure	• The default setting is either "METRIC" or "INCH." METRIC INCH

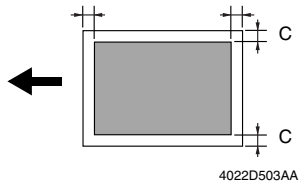
B. LEADING EDGE ERASE

Functions	• To change the laser emission timing to adjust the width of the image area that is erased at the leading edge.
Use	• When the PH unit has been replaced • When the user requests a smaller margin
Adjustment Specification	 4022D503AA •Specify the amount erased at the leading edge (width of A) of the paper. Specifications 0 ± 2.0 mm Setting Range 0 to 5 (1 increment = 1 mm) The default setting is "4" mm
Adjustment Instruction	To reduce the margin..... Decrease the setting. To increase the margin..... Increase the setting.
Adjustment Procedure	*1.* Enter Service's Choice in the Service mode. *2.* Select "LEADING EDGE ERASE." *3.* Specify the setting. *4.* Specify settings for the "TRAILING EDGE ERASE" and the "VERTICAL EDGE ERASE" functions in the same way.

C. TRAILING EDGE ERASE

Functions	• To change the laser emission timing to adjust the width of the image area that is erased at the trailing edge.
Use	• When the PH unit has been replaced • When the user requests a smaller margin
Adjustment Specification	 •Specify the amount erased at the trailing edge (width of B) of the paper. Specifications 0 ± 2.0 mm Setting Range 0 to 5 (1 increment = 1 mm) The default setting is “4” mm
Adjustment Instruction	To reduce the margin..... Decrease the setting. To increase the margin..... Increase the setting.
Adjustment Procedure	*1.* Enter Service’s Choice in the Service mode. *2.* Select “TRAILING EDGE ERASE”. *3.* Specify the setting. *4.* Specify settings for the “LEADING EDGE ERASE” and the “VERTICAL EDGE ERASE” functions in the same way.

D. VERTICAL EDGE ERASE

Functions	• To change the laser emission timing to adjust the width of the image area that is erased on both sides (main scan direction).
Use	• When the PH unit has been replaced • When the user requests a smaller margin
Adjustment Specification	 •Specify the amount erased at the both sides (width of C) of the paper. Specifications 0 ± 2.0 mm Setting Range 0 to 5 (1 increment = 1 mm) The default setting is “4” mm
Adjustment Instruction	To reduce the margin..... Decrease the setting. To increase the margin..... Increase the setting.
Adjustment Procedure	*1.* Enter Service’s Choice in the Service mode. *2.* Select “VERTICAL EDGE ERASE”. *3.* Specify the setting. *4.* Specify settings for the “LEADING EDGE ERASE” and the “TRAILING EDGE ERASE” functions in the same way.

E. FLS PAPER SIZE

Functions	• To specify the paper size for foolscap.
Use	• When the FLS paper size has been changed • Upon setup
Setting/Procedure	• The default setting is “330∗210.” 330∗203 “330∗210” 330∗216 337∗206

F. GDI TIMEOUT

Functions / Use	• To specify the time for GDI time out. • **bizhub 160 only.**
Setting/Procedure	• The default setting is “6” (60 seconds). 0 (5sec) 1 (10sec) 2 (20sec) 3 (30sec) 4 (40sec) 5 (50sec) “6” (60sec)

G. TONER EMPTY STOP

Functions / Use	• To select if copy operations are stopped when the toner becomes empty.
Setting/Procedure	• The default setting is “ON.” “ON” OFF • If “OFF” is selected, operations are not stopped when the toner becomes empty.

H. PRE-ROTATION

Functions / Use	• To select if the pre-rotation operation for the Fusing Roller is performed when the Start key is pressed.
Setting/Procedure	• The default setting is “ON.” “ON” OFF • If “OFF” is selected, the length of time until the first copy can be printed is shorter.

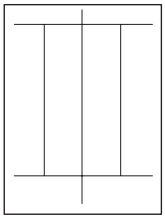
I. FUSER TEMP.Ad

Functions	• To specify the fusing temperature when using plain paper (more than 186 mm).
Use	• When a fusing failure has occurred
Setting/Procedure	• The default setting is “0.” “0” (Standard) 1 (Higher)

12.3.2 ADJUST

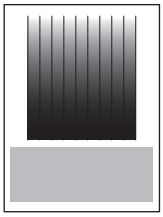
Precautions for making test copies with functions from the “ADJUST” menu
- The test pattern should be positioned vertically.
- Use paper loaded into Tray1 to make the test copy.

TEST PATTERN 1



4980S530AA

TEST PATTERN 2



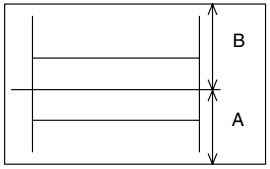
4980S531AA

A. Printing a Test Pattern

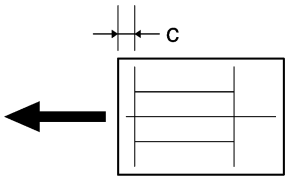
NOTE
Print a test pattern when making the following adjustments.
- **Printer’s main scanning & sub-scanning registration adjustments**
- **Scanner’s main scanning & sub-scanning registration adjustments**
- **Scanner’s zoom ratio adjustment**

1. Enter the Service mode.
2. Press the Density Select key to select the function.
3. Select “PRINT TEST PATTERN” → “TEST PATTERN 1.”
4. Press the Start key to begin printing the test pattern.

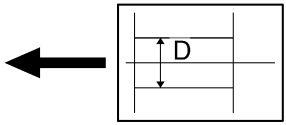
B. PRN MAIN REGIST

Functions	• To vary and adjust the print start position in the main scanning direction.
Use	• If the image on the copy deviates in the main scan direction • When the PH unit has been replaced
Adjustment Specification	 1382D011AA •Adjust the amount that widths A and B in the printed test pattern are shifted so that the following specification is met. Specifications 0 ± 2.0 mm Setting Range 60 to 140 (1 increment = 0.1 mm) The default setting is “100”
Adjustment Instruction	If the width of A is less than the width of B..... Increase the setting. If the width of B is less than the width of A..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Check the amount that widths A and B in the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure. *3.* Enter the “ADJUST” menu in the Service mode. *4.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *5.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** *6.* Print a test pattern again and check it.

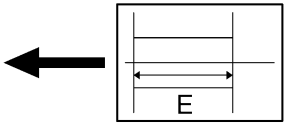
C. PRN SUB REGIST

Functions	• To vary and adjust the print start position in the sub-scanning direction.
Use	• After the PRN MAIN REGIST adjustment has been performed • If the image on the copy deviates in the sub scan direction • When the PH unit has been replaced
Adjustment Specification	 4007D051AA •Adjust the width of C in the printed test pattern so that the following specification is met. Specifications 20 ± 2.5 mm Setting Range 87 to 113 (1 increment = 0.46 mm) The default setting is “100”
Adjustment Instruction	If the width of C in the test pattern is longer than the specified width ..... Increase the setting. If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Check that the width of C in the test pattern meets the specification. If the width of C is out of specification, adjust it according to the following procedure. *3.* Enter the “ADJUST” menu in the Service mode. *4.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *5.* Press the Yes key to apply the setting. **NOTE** • **If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** *6.* Print a test pattern again and check it.

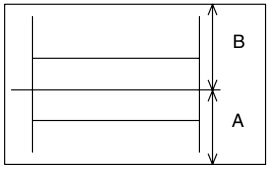
D. CCD MAIN ZOOM

Functions	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the main scanning direction.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST adjustments have been performed • When the Scanner Assy. has been replaced
Adjustment Specification	 4007D052AA •After finishing the PRN MAIN REGIST and PRN SUB REGIST adjustments. •Place the printed test pattern on the Original Glass, and make a copy of it. •Adjust the width of D in the copy of the test pattern so that the following specification is met. Specifications 100 ± 0.5 % (Zoom Ratio = Full Size :100%) Setting Range 95 to 105 (1 increment = 0.4 %) The default setting is “100”
Adjustment Instruction	If the width of D in the test pattern is longer than the specified width. ..... Decrease the setting. If the width of D in the test pattern is shorter than the specified width. ..... Increase the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Place the test pattern on the Original Glass and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray1 to make the test copy.** *4.* Check that the width of D in the copy of the test pattern meets the specification. Calculation: (1 – Width of D in the document ÷ Width of D in the copy) × 100 If the width of D is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Place the test pattern on the Original Glass again, make another test copy, and check it.**

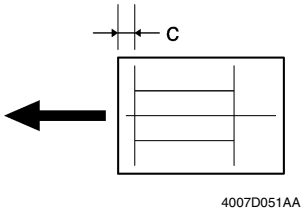
E. CCD SUB ZOOM

Functions	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST adjustments have been performed • When the Scanner Assy. has been replaced
Adjustment Specification	 4007D053AA •After finishing the PRN MAIN REGIST and PRN SUB REGIST adjustments. •Place the printed test pattern on the Original Glass, and make a copy of it. •Adjust the width of E in the copy of the test pattern so that the following specification is met. Specifications 200 ± 0.5% (Zoom Ratio = Full Size:100 %) Setting Range 95 to 105 (1 increment = 0.4 %) The default setting is “100”
Adjustment Instruction	If the width of E in the test pattern is longer than the specified width. ..... Decrease the setting. If the width of E in the test pattern is shorter than the specified width. ..... Increase the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Place the test pattern on the Original Glass and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray1 to make the test copy.** *4.* Check that the width of E in the copy of the test pattern meets the specification. Calculation: (1 – Width of E in the document ÷ Width of E in the copy) × 100 If the width of E is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Place the test pattern on the Original Glass again, make another test copy, and check it.**

F. CCD MAIN REGIST

Functions	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the main scanning direction.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD MAIN ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the Scanner Assy. has been replaced
Adjustment Specification	 1382D011AA •After finishing the PRN MAIN REGIST & PRN SUB REGIST and CCD MAIN ZOOM adjustments. •Place the printed test pattern on the Original Glass, and make a copy of it. •Adjust the amount that widths A and B in the printed test pattern are shifted so that the following specification is met. Specifications 0 ± 2.0 mm Setting Range 90 to 110 (1 increment = 0.5 mm) The default setting is “100”
Adjustment Instruction	If the width of A is less than the width of B..... Increase the setting. If the width of B is less than the width of A..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Place the test pattern on the Original Glass and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray1 to make the test copy.** *4.* Check the amount that widths A and B in the copy of the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Place the test pattern on the Original Glass again, make another test copy, and check it.**

G. CCD SUB REGIST

Functions	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the Scanner Assy. has been replaced
Adjustment Specification	 4007D051AA •After finishing the PRN MAIN REGIST & PRN SUB REGIST and CCD SUB ZOOM adjustments. •Place the printed test pattern on the Original Glass, and make a copy of it. •Adjust the width of C in the printed test pattern so that the following specification is met. Specifications 20 ± 3.0 mm Setting Range 90 to 110 (1 increment = 0.5 mm) The default setting is “100”
Adjustment Instruction	If the width of C in the test pattern is longer than the specified width ..... Increase the setting. If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Place the test pattern on the Original Glass and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray1 to make the test copy.** *4.* Check that the width of C in copy of the test pattern meets the specification. If the width of C is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Place the test pattern on the Original Glass again, make another test copy, and check it.**

H. ADF SUB ZOOM

☞ For details, see DF-501 Service Manual.

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction when using the Automatic Document Feeder.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced

I. ADF MAIN REGIST

☞ For details, see DF-501 Service Manual.

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction when using the Automatic Document Feeder.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD MAIN ZOOM adjustments have been performed • After the ADF SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced

J. ADF SUB REGIST

☞ For details, see DF-501 Service Manual.

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction when using the Automatic Document Feeder.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD SUB ZOOM adjustments have been performed • After the ADF SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced

12.3.3 COUNTER

- The counter values can be displayed.

NOTE
The following counters continue counting even while operations are performed in Service Mode.
- **PM COUNTER**
- **IC COUNTER**
- **PRINTER JAM COUNTER**
- **ADF JAM COUNTER**
- **TROUBLE COUNTER**

A. TOTAL COUNTER

Functions / Use	• To display the total number of pages used.
Setting/Procedure	• COPY: Number of copies printed • PRINT: Number of computer printouts printed • Test prints made in Service mode to check the operation are not counted.

B. PM COUNTER

Functions / Use	• To display the number of times that PM parts are used.
Setting/Procedure	• To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

C. I/C COUNTER

Functions / Use	• To display the total number of times that the Drum Cartridge has been used.
Setting/Procedure	• To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

D. APPLICATION COUNTER

Functions / Use	• To display the number of pages used with each application.
Setting/Procedure	COPY PRINT : Number of copies printed FAX RX PRINT : (Not Used) REPORT PRINT : (Not Used) PC PRINT : Number of computer printouts printed FAX TX PAGE : (Not Used) MAIL TX PAGE : (Not Used) • To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

E. SCAN COUNTER

Functions / Use	• To display the number of scans made.
Setting/Procedure	MONOCHROME : Number of monochrome scans COLOR : Number of color scans • Scans made while making copies are not counted. • To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

F. PRINTER JAM COUNTER

Functions / Use	• To display the number of misfeeds that occurred while printing.
Setting/Procedure	• To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

G. ADF JAM COUNTER

Functions / Use	• To display the number of misfeeds that occurred while using the Automatic Document Feeder. • When DF-501 (option) is set, this counter is displayed.
Setting/Procedure	• To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

H. TROUBLE COUNTER

Functions / Use	• To display the number of times each error was detected.
Setting/Procedure	C0045 :Fuser fan error C0210 :Transfer voltage error C0500 :Fuser Warm up error C0510 :Fuser temperature low C0520 :Fuser overheat C0650 :Home sensor error / Scanner motor error C1200 :ASIC memory abnormal C1300 :Polygon mirror motor error C133B :Communication with option error C133C :Modem error C133D :ROM checksum error C13F0 :Laser error C1468 :Parameter Chip error C14A3 :IR lamp malfunction • To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

12.3.4 DISPLAY

- Various information can be displayed.

<table>
<tr><th>Function</th><th>Purpose</th><th>Setting Details/Precautions</th></tr>
<tr><td>MAIN F/W VER.</td><td colspan="2">To display the version of the Copier firmware.</td></tr>
<tr><td>ENGINE F/W VER.</td><td colspan="2">To display the version of the engine firmware.</td></tr>
<tr><td>PCL F/W VER.</td><td colspan="2">To display the version of the PCL firmware.</td></tr>
<tr><td>NIC F/W VER.</td><td colspan="2">To display the version of the NIC firmware.</td></tr>
<tr><td>MAIN RAM SIZE</td><td colspan="2">To display the size of the main memory.</td></tr>
<tr><td>PCL RAM SIZE</td><td colspan="2">To display the size of the PCL memory.</td></tr>
<tr><td>SERIAL NO.</td><td colspan="2">To display the serial number of the main unit.
• Once the serial number is specified, “SERIALNO.” on the “ADJUST” menu cannot be set again.</td></tr>
<tr><td>CUSTOMER ID</td><td colspan="2">To display the customer ID for the main unit.</td></tr>
<tr><td>TC TYPE</td><td>To specify the type of Toner Cartridge that should be installed in the main unit.
• Once the type of Toner Cartridge is specified, “TC TYPE” on the “ADJUST” menu cannot be set again.
<Types of Toner Cartridges>
• Europe:
Toner Cartridge 906 A
• Others:
Toner Cartridge 907 B
• North/ South America:
Toner Cartridge 908 C</td><td>• The default setting differs depending on the marketing area.
<table><tr><th>Toner Cartridge Type</th><th>Setting</th></tr><tr><td>(No Toner Cartridge)</td><td>0</td></tr><tr><td>(Not Used)</td><td>1</td></tr><tr><td>A</td><td>2</td></tr><tr><td>B</td><td>3</td></tr><tr><td>(Not Used)</td><td>4</td></tr><tr><td>C</td><td>5</td></tr><tr><td>(Not Used)</td><td>6</td></tr><tr><td>(Not Used)</td><td>7</td></tr><tr><td>(Not Used)</td><td>8</td></tr><tr><td>(Not Used)</td><td>9</td></tr><tr><td>(Not Used)</td><td>10</td></tr><tr><td>(Not Used)</td><td>11</td></tr></table></td></tr>
</table>

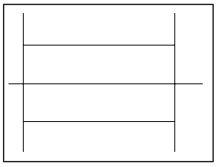
12.3.5 FUNCTION

- The service functions (paper feed test and image printing) can be checked and adjusted.

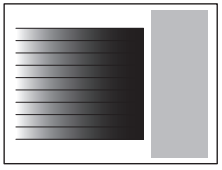
A. PAPER FEED TEST

Functions	• To check the paper feeding in the paper take-up/transport sections without printing on the paper.
Use	• When a paper misfeed occurs
Setting/Procedure	*1.* Select the paper tray. *2.* Press the Start key to begin testing paper feeding. *3.* Press the Stop key to stop testing paper feeding.

B. PRINT TEST PATTERN 1

Functions	• To print the test pattern for adjusting the image.  4980S530AA
Use	• If there is tilt or when registration or zoom ratio adjustments are performed
Setting/Procedure	*1.* Select the paper tray. *2.* Select the test pattern type. *3.* Press the Start key to print the test pattern.

C. PRINT TEST PATTERN 2

Functions	• To print the test pattern for halftones and gradations.  4980S531AA
Use	• When checking density and pitch irregularities • When checking reproducibility of gradations
Setting/Procedure	*1.* Select the paper tray. *2.* Select the test pattern type. *3.* Press the Start key to print the test pattern.

D. ADF FEED TEST

Functions	• To check the paper feeding in the paper take-up/transport sections in the Automatic Document Feeder.
Use	• When a document misfeed occurs
Setting/Procedure	*1.* Load paper into the Automatic Document Feeder. *2.* Press the Start key to begin testing paper feeding. *3.* Press the Stop key to stop testing paper feeding.

E. COPY ADF GLASS AREA

Functions	• To check for dirt in the scanning section of the Automatic Document Feeder.
Use	• If spots appear in the copies
Setting/Procedure	*1.* Load A4 or Letter paper into Tray1. *2.* Press the Start key to start the “COPY ADF GLASS AREA” function. *3.* Two copy samples are fed out. *4.* Check that no spots appear in the copy samples. *5.* Press the Stop key to stop the “COPY ADF GLASS AREA” function.

F. CCD MOVE TO HOME

Functions	• To move the scanner to its home position in order to secure the scanner.
Use	• When transporting the machine
Setting/Procedure	**NOTE** • **When transporting the machine, be sure to move the scanner to its home position and secure it with the stopper at the bottom left of the IR.**

G. SCAN TEST

Functions	• To check the lighting of the Exposure Lamp and the movement of the scanner.
Use	• If the scanner malfunctions
Setting/Procedure	*1.* Press the Start key to begin the scanner test. *2.* Press the Stop key to stop the scanner test.

12.3.6 FIXED ZOOM CHANGE

Functions/Use	• The fixed zoom ratios can be changed.
Setting/Procedure	*1.* Select the fixed zoom ratio that you wish to change. *2.* Use the 10-Key Pad to type in the desired fixed zoom ratio.

A. Default fixed zoom ratios and setting ranges according to marketing area

• Metric

Setting Name	Initial fixed zoom ratio	Setting Range
Reduction 2	70%	51% to 70%
Reduction 1	81%	71% to 99%
Expansion 1	115%	101% to 140%
Expansion 2	141%	141% to 199%

• Inch

Setting Name	Initial fixed zoom ratio	Setting Range
Reduction 2	64%	51% to 64%
Reduction 1	78%	65% to 99%
Expansion 1	129%	101% to 153%
Expansion 2	154%	154% to 199%

12.3.7 FACTORY TEST

• Operation tests can be performed during manufacturing.

	Functions/Use
PANEL BUZZER TEST	To check the operation of the display and all indicators and buttons.
RAM TEST	To test reading and writing of the memory.

12.3.8 CLEAR DATA

- Each type of data can be cleared.

A. MEMORY CLEAR

Functions/Use	• To clear the settings for the functions listed at the right and return the functions to their default settings.
Setting/Procedure	• All functions of the Utility mode • All functions in the “Services Choice” menu of the Service mode • All functions in the “ADJUST” menu of the Service mode (except “SERIAL NO.”, “CUSTOMER ID” and “TC TYPE”) • All “FIXED ZOOM” settings in the Service mode • All Security mode settings in the Service mode **NOTE** • **After the “MEMORY CLEAR” function is performed, turn the machine off, then on again.**

B. TOTAL CLEAR

Functions/Use	• The following counter are cleared (initialization).
Setting/Procedure	• PM counter • I/C counter • Application counter • Scan counter • Printer jam counter • ADF jam counter • Trouble counter **NOTE** • **After the “TOTAL CLEAR” function is performed, turn the machine off, then on again.** • **The clearance of “TOTAL COUNTER” can not be performed.**

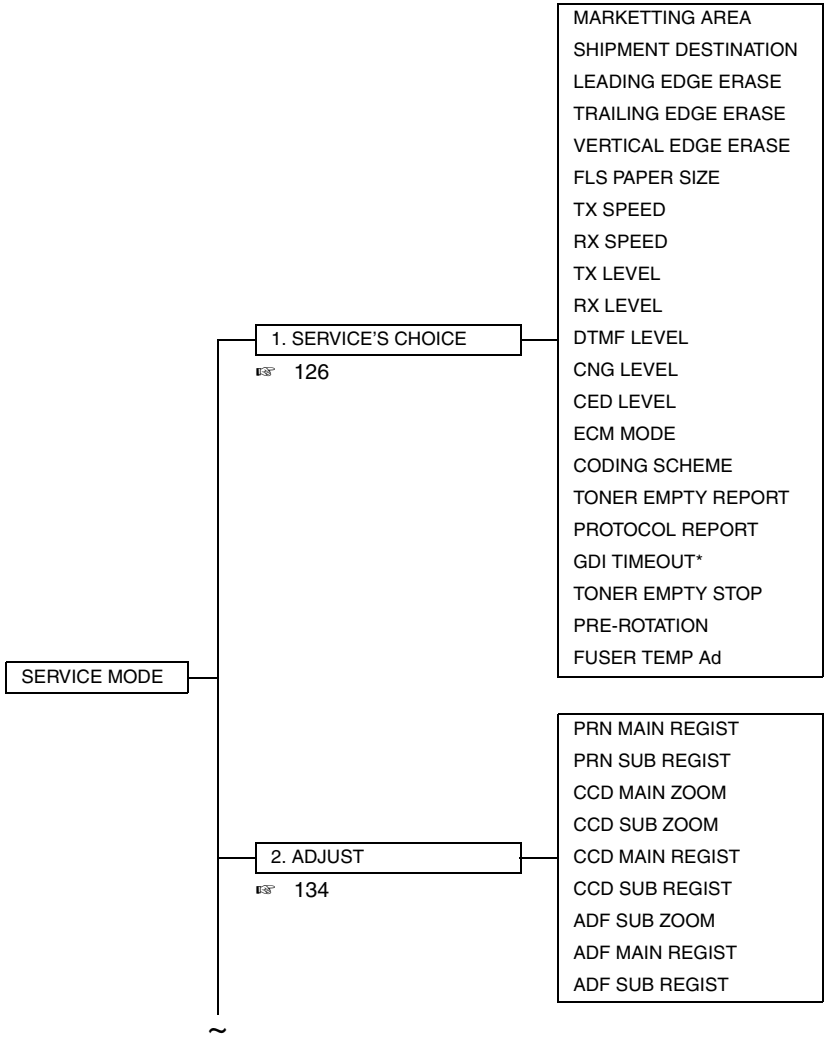
C. Other Counter Clear

Functions	Use
PM COUNTER	To clear the PM COUNTER value.
I/C COUNTER	To clear the I/C COUNTER value.
APPLICATION COUNTER	To clear the APPLICATION COUNTER value.
SCAN COUNTER	To clear the SCAN COUNTER value.
PRINTER JAM COUNTER	To clear the PRINTER JAM COUNTER value.
ADF JAM COUNTER	To clear the ADF JAM COUNTER value.
TROUBLE COUNTER	To clear the TROUBLE COUNTER value.

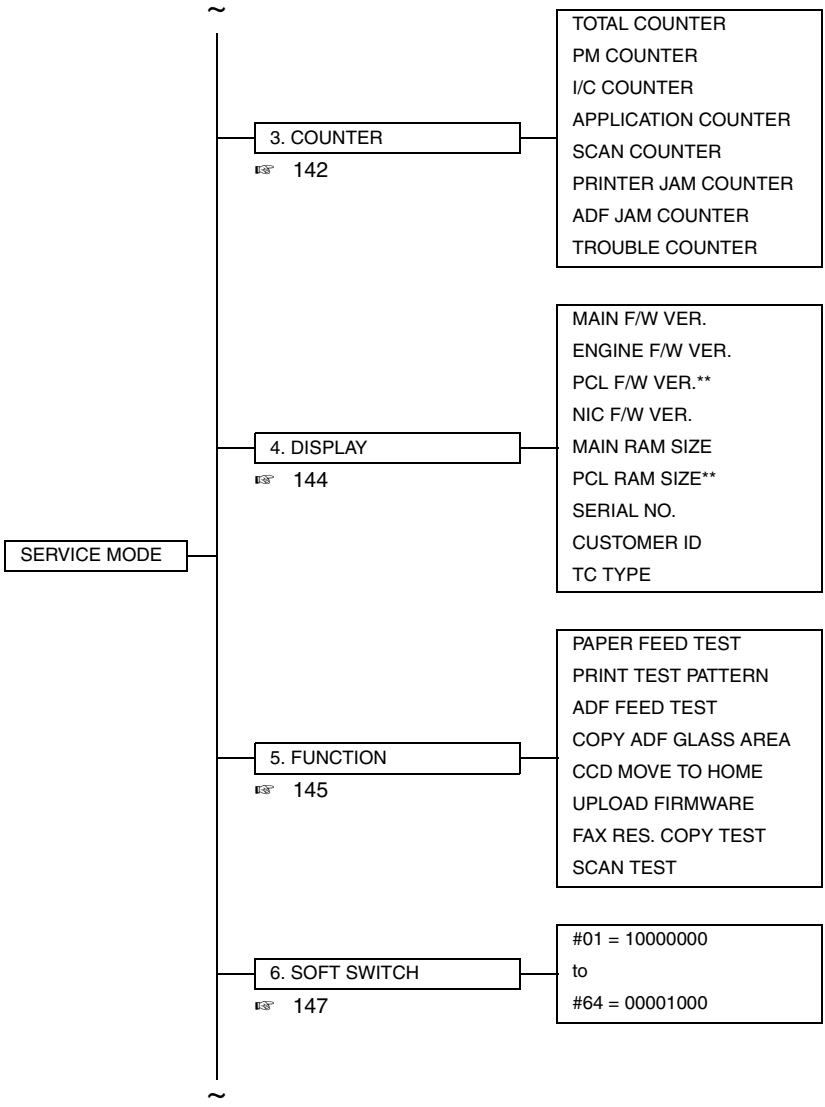
13. Service Mode (bizhub 160f/bizhub 161f)

- This mode is used to check, specify, adjust and register service functions.

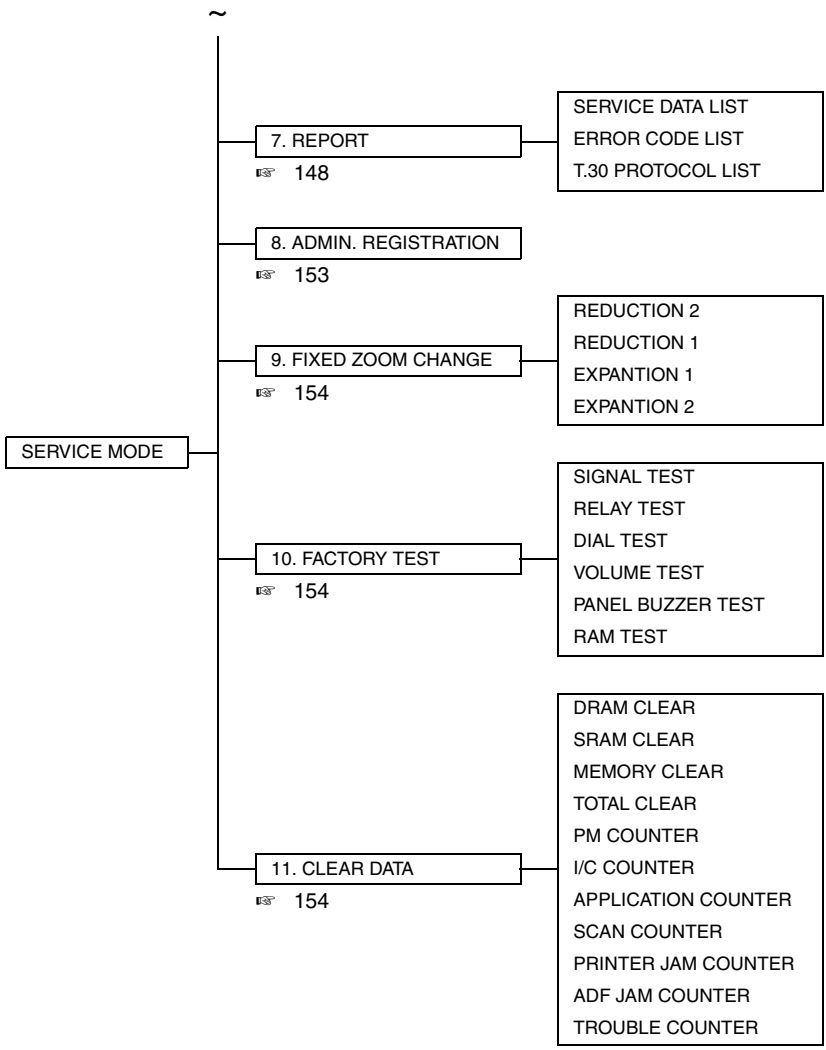
13.1 Service Mode function tree



*: bizhub 160f only
**: bizhub 161f only



*: bizhub 160f only
**: bizhub 161f only


~
SERVICE MODE
7. REPORT
☞ 148
SERVICE DATA LIST
ERROR CODE LIST
T.30 PROTOCOL LIST
8. ADMIN. REGISTRATION
☞ 153
9. FIXED ZOOM CHANGE
☞ 154
REDUCTION 2
REDUCTION 1
EXPANTION 1
EXPANTION 2
10. FACTORY TEST
☞ 154
SIGNAL TEST
RELAY TEST
DIAL TEST
VOLUME TEST
PANEL BUZZER TEST
RAM TEST
11. CLEAR DATA
☞ 154
DRAM CLEAR
SRAM CLEAR
MEMORY CLEAR
TOTAL CLEAR
PM COUNTER
I/C COUNTER
APPLICATION COUNTER
SCAN COUNTER
PRINTER JAM COUNTER
ADF JAM COUNTER
TROUBLE COUNTER

13.2 Service Mode setting procedure

NOTE

- **Be sure to keep the access procedure for the Service mode from any unauthorized persons not involved with service operations.**

13.2.1 Procedure

1. Press the Utility key.
2. Press the following keys in this order to enter the Service mode.
   Stop → 0 → 0 → Stop → 0 → 1
3. The first Service mode screen appears.

13.2.2 Exiting procedure

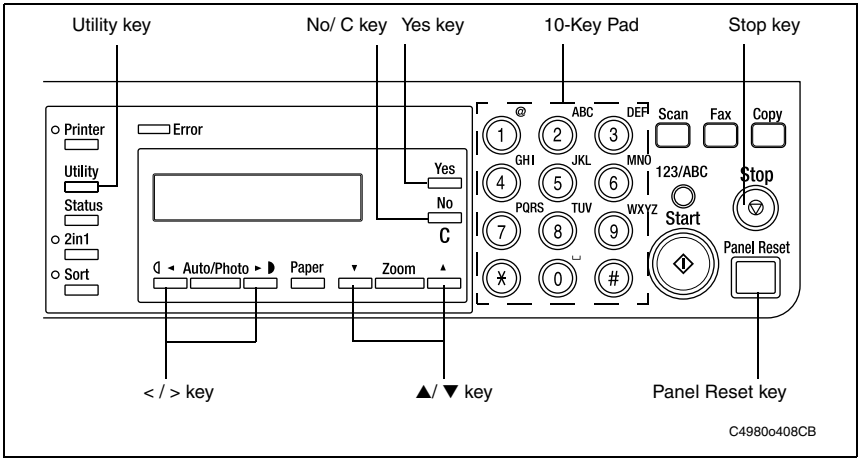
- Press the Panel Reset key.

13.2.3 Changing the settings for Service Mode functions

1. Press the ▲/ ▼ key to select the desired function.
2. Press the ▲/ ▼ key, < / > key or the 10-Key Pad to select the desired setting.
3. Press the Yes key to apply the setting.
4. To return to the previous screen, press the No/C key.

NOTE

- **In order for the settings for the Service Mode functions to be changed, the machine must be turned off, then on again.**



13.3 Service Mode functions

13.3.1 SERVICE'S CHOICE

A. MARKETTING AREA

- Set the marketing area.
- If you change the marketing area, the soft switch (1-64) will change automatically.

NOTE

- **If you change the marketing area, the following items are cleared (initialization). Before change the marketing area, be sure to record the setting values that are to be change the marketing area.**
- **After change the marketing area has been executed, make necessary entries of data again based on the setting values recorded.**

Function		Default Setting
Utility mode/ Machine setting/ Buzzer volume	☞ 76	Low
Utility mode/ Admin. management/ Remote monitor	☞ 78	Limited

- **According to the following table, the machines that are installed in the West Europe Area select "West Europe" in the "Marketing Area" function. Do not select each country.**

Marketing area	Country
Standard	Baltic, Bahrain, Indonesia, Israel, Kuwait, Oman, Philippine, Poland, Qatar, Romania, Russia, Saudiarabia, Slovakia, Slovenia, Thailand, U.A.E., Ukraine
U.S.A	U.S.A., Canada.
West Europe	Austria, Belgium, Czech, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, West Europe.
Asia	Hong Kong, Malaysia
Setting in accordance with each country	Australia, China, Germany, Japan, Korea, New Zealand, South Africa, Taiwan.
Singapore	Singapore (remark: with DTS default setting).

(1) MARKETING AREA Setting Procedure

- Use the one touch key or using [▲ / ▼] key to select any number from 1 to 15.

One Touch	Marketing area	One Touch	Marketing area
1	STANDARD	9	NETHERLANDS
2	U.S.A.	10	FINLAND
3	TAIWAN	11	DENMARK
4	SPAIN	12	SWITZERLAND
5	ITALY	13	IRELAND
6	BELGIUM	14	PORTUGAL
7	NORWAY	15	SOUTH AFRICA
8	SWEDEN	-	-

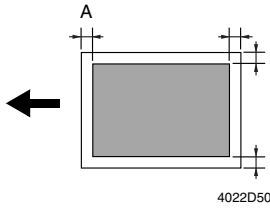
- Using [▲ / ▼] key to select any number from 16 to 48.

No.	Marketing area	No.	Marketing area
16	GREECE	33	POLAND
17	ISRAEL	34	ROMANIA
18	AUSTRIA	35	RUSSIA
19	GERMANY	36	SINGAPORE
20	FRANCE	37	MALAYSIA
21	UNITED KINGDOM	38	HONG KONG
22	AUSTRALIA	39	PHILIPPINES
23	CHINA	40	THAILAND
24	NEW ZEALAND	41	INDONESIA
25	KOREA	42	OMAN
26	CZECH	43	UAE
27	SLOVAK	44	QATAR
28	HUNGARY	45	BAHRAIN
29	UKRAINE	46	KUWAIT
30	BALTIC	47	SAUDI ARABIA
31	WEST EUROPE	48	JAPAN
32	SLOVENIJA	-	-

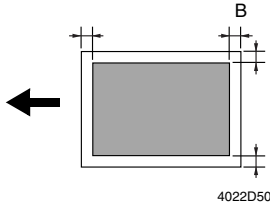
B. SHIPMENT DESTINATION

Functions / Use	• To switch the fixed zoom ratios and paper sizes according to the selected marketing area.
Setting/Procedure	• The default setting is either “METRIC” or “INCH.” METRIC INCH

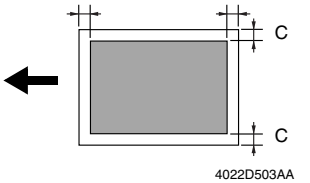
C. LEADING EDGE ERASE

Functions	• To change the laser emission timing to adjust the width of the image area that is erased at the leading edge.
Use	• When the PH unit has been replaced • When the user requests a smaller margin
Adjustment Specification	 4022D503AA •Specify the amount erased at the leading edge (width of A) of the paper. Specifications 0 ± 2.0 mm Setting Range 0 to 5 (1 increment = 1 mm) The default setting is “4” mm
Adjustment Instruction	To reduce the margin..... Decrease the setting. To increase the margin..... Increase the setting.
Adjustment Procedure	*1.* Enter Service’s Choice in the Service mode. *2.* Select “LEADING EDGE ERASE.” *3.* Specify the setting. *4.* Specify settings for the “TRAILING EDGE ERASE” and the “VERTICAL EDGE ERASE” functions in the same way.

D. TRAILING EDGE ERASE

Functions	• To change the laser emission timing to adjust the width of the image area that is erased at the trailing edge.
Use	• When the PH unit has been replaced • When the user requests a smaller margin
Adjustment Specification	 4022D503AA •Specify the amount erased at the trailing edge (width of B) of the paper. Specifications 0 ± 2.0 mm Setting Range 0 to 5 (1 increment = 1 mm) The default setting is “4” mm
Adjustment Instruction	To reduce the margin..... Decrease the setting. To increase the margin..... Increase the setting.
Adjustment Procedure	*1.* Enter Service’s Choice in the Service mode. *2.* Select “TRAILING EDGE ERASE.” *3.* Specify the setting. *4.* Specify settings for the “LEADING EDGE ERASE” and the “VERTICAL EDGE ERASE” functions in the same way.

E. VERTICAL EDGE ERASE

Functions	• To change the laser emission timing to adjust the width of the image area that is erased on both sides (main scan direction).
Use	• When the PH unit has been replaced • When the user requests a smaller margin
Adjustment Specification	 4022D503AA •Specify the amount erased at the both sides (width of C) of the paper. Specifications 0 ± 2.0 mm Setting Range 0 to 5 (1 increment = 1 mm) The default setting is “4” mm
Adjustment Instruction	To reduce the margin..... Decrease the setting. To increase the margin..... Increase the setting.
Adjustment Procedure	*1.* Enter Service’s Choice in the Service mode. *2.* Select “VERTICAL EDGE ERASE.” *3.* Specify the setting. *4.* Specify settings for the “LEADING EDGE ERASE” and the “TRAILING EDGE ERASE” functions in the same way.

F. FLS PAPER SIZE

Functions	• To specify the paper size for foolscap.
Use	• When the FLS paper size has been changed • Upon setup
Setting/Procedure	• The default setting is “330∗210” mm. 330∗203 “330∗210” 330∗216 337∗206 (mm)

G. TX SPEED

Functions/Use	• Transmit start speed setting. Choose the mode from among the following.
Setting/Procedure	• The default setting is “V.34.” “V.34” : 33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800 V.17 : 14400, 12000, 9600, 7200 V.29 : 9600, 7200 V.27 : 4800, 2400

H. RX SPEED

Functions/Use	• Reception start speed setting. Choose the mode from among the following.
Setting/Procedure	• The default setting is “V.34.” “V.34” : 33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800 V.17 : 14400, 12000, 9600, 7200 V.29 : 9600, 7200 V.27 : 4800, 2400

I. TX LEVEL

Functions/Use	• PSK/FSK signal output level.
Setting/Procedure	• The default setting is "-9 dBm." -2 dBm -3 to -8 dBm "-9 dBm" -10 to -16 dBm -17 dBm

J. RX LEVEL

Functions/Use	• Reception sensitivity level.
Setting/Procedure	• The default setting is "-43 dBm." -36 dBm -37 to -42 dBm "-43 dBm" -44 to -48 dBm -49 dBm

K. DTMF LEVEL

Functions/Use	• Dual tone output level.
Setting/Procedure	• The default setting is "-9 dBm." -2 dBm -3 to -8 dBm "-9 dBm" -10 to -16 dBm -17 dBm

L. CNG LEVEL

Functions/Use	• Calling tone output level.
Setting/Procedure	• The default setting is "-11 dBm." -2 dBm -3 to -10 dBm "-11 dBm" -12 to -16 dBm -17 dBm

M. CED LEVEL

Functions/Use	• Answer tone output level.
Setting/Procedure	• The default setting is "-11 dBm." -2 dBm -3 to -10 dBm "-11 dBm" -12 to -16 dBm -17 dBm

N. ECM MODE

Functions/Use	• Select error correction mode.
Setting/Procedure	• The default setting is "ON." "ON" : When an error occurs during communication, re-send the frame where the error occurs. OFF : Any error is ignored during communication.

O. CODING SCHEME

Functions/Use	• Select compression method in TX/ RX mode.
Setting/Procedure	• The default setting is "JBIG." "JBIG" : The most complex compression method that generates the smallest code than any of following ones. MMR : A compression method. MR : A compression method. MH : The simplest compression method.

• Select compression method in TX/ RX mode.

P. Toner Empty Report

Functions/Use	• Select to generate a report to a specific destination when toner empty status occurs in the engine.
Setting/Procedure	• The default setting is "OFF." "OFF" : Not to generate report. ON : Generate a report to report destination. • If "ON" is selected, select generate report and send to remote side when toner runs out. • Enter the telephone number for which the report is to be produced. • Fax number specifications: An up-to-20-digit number that may consist of "0-9", "*", "#", "pause", and "space." (0-9, #, *, pause, _) • The report will generate after 20 minutes, 24 hours, 48 hours, or 72 hours after the event has occurred or until the condition is gone.

- Toner empty report (example)

SERVICE REPORT

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

The Fax's following conditions were appears, the machine may be can not work correctly, the Fax already send a report to your dealer automatically. They will contact with you soon.

Toner status : Empty

Q. PROTOCOL REPORT

Functions/Use	• Print communication report. • Choose one from among the following.
Setting/Procedure	• The default setting is “OFF.” “OFF” : Disable T.30 communication report. ON : Print T.30 communication report. ON(ERROR) : Print T.30 communication report when an error occurs.

T.30 communication report (example: V.17 communication)

PROTOCOL MONITOR REPORT

NAME: ABC
TEL:886 3 4733507
DATE: APR.10’97 12:20

SESSION	FUNCTION	NO	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	01	ABC 22345678901234567890	DEC.02	15:00	008	00h00min00s	ECM-12	OK

TX	RX		DATA
NSF			FF 03 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CSI			FF 03 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DIS			FF 13 40 00 00 00 00 00
	NSS		FF 03 00 00 00 00 00 00 00 00 00 00 00
	DCS		FF 03 00 00 00 00 00 00 00 00 00
	TCF		00 00 00 00 00 00 00 00 00 00 00
CFR			FF 13 84
	PIX		
	EOP		FF 13 BF 2F 00 00 41
MCF			FF 13 8C
	DCN		FF 13 FB

R. GDI TIMEOUT

Functions / Use	• To specify the time for GDI time out. • **bizhub 160 only.**
Setting/Procedure	• The default setting is “6” (60 seconds). 0 (5sec) 1 (10sec) 2 (20sec) 3 (30sec) 4 (40sec) 5 (50sec) “6” (60sec)

S. TONER EMPTY STOP

Functions / Use	• To select if copy operations are stopped when the toner becomes empty.
Setting/Procedure	• The default setting is “ON.” “ON” OFF • If “OFF” is selected, operations are not stopped when the toner becomes empty.

T. PRE-ROTATION

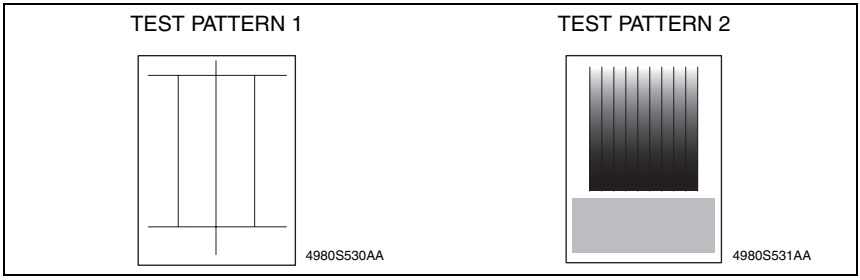
Functions / Use	• To select if the pre-rotation operation for the Fusing Roller is performed when the Start key is pressed.
Setting/Procedure	• The default setting is “ON.” “ON” OFF • If “OFF” is selected, the length of time until the first copy can be printed is shorter.

U. FUSER TEMP Ad

Functions	• To specify the fusing temperature when using plain paper (more than 186 mm).
Use	• When a fusing failure has occurred
Setting/Procedure	• The default setting is “0.” “0” (Standard) 1 (Higher)

13.3.2 ADJUST

Precautions for making test copies with functions from the “ADJUST” menu
- The test pattern should be positioned vertically.
- Use paper loaded into Tray1 to make the test copy.

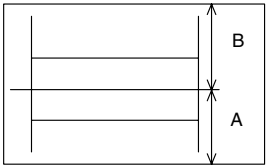


A. Printing a Test Pattern

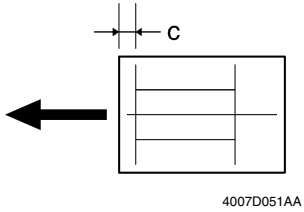
NOTE
Print a test pattern when making the following adjustments.
- **Printer’s main scanning & sub-scanning registration adjustments**
- **Scanner’s main scanning & sub-scanning registration adjustments**
- **Scanner’s zoom ratio adjustment**

1. Enter the Service mode.
2. Press the Density Select key to select the function.
3. Select “PRINT TEST PATTERN” → “TEST PATTERN 1.”
4. Press the Start key to begin printing the test pattern.

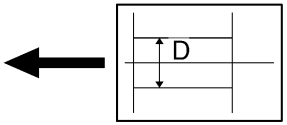
B. PRN MAIN REGIST

Functions	• To vary and adjust the print start position in the main scanning direction.
Use	• If the image on the copy deviates in the main scan direction • When the PH unit has been replaced
Adjustment Specification	 1382D011AA •Adjust the amount that widths A and B in the printed test pattern are shifted so that the following specification is met. Specifications 0 ± 2.0 mm Setting Range 60 to 140 (1 increment = 0.1 mm) The default setting is “100”
Adjustment Instruction	If the width of A is less than the width of B..... Increase the setting. If the width of B is less than the width of A..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Check the amount that widths A and B in the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure. *3.* Enter the “ADJUST” menu in the Service mode. *4.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *5.* Press the Yes key to apply the setting. **NOTE** • **If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** *6.* Print a test pattern again and check it.

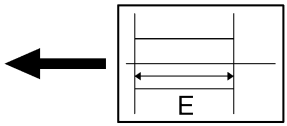
C. PRN SUB REGIST

Functions	• To vary and adjust the print start position in the sub-scanning direction.
Use	• After the PRN MAIN REGIST adjustment has been performed • If the image on the copy deviates in the sub scan direction • When the PH unit has been replaced
Adjustment Specification	 4007D051AA •Adjust the width of C in the printed test pattern so that the following specification is met. Specifications 20 ± 2.5 mm Setting Range 87 to 113 (1 increment = 0.46 mm) The default setting is “100”
Adjustment Instruction	If the width of C in the test pattern is longer than the specified width ..... Increase the setting. If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Check that the width of C in the test pattern meets the specification. If the width of C is out of specification, adjust it according to the following procedure. *3.* Enter the “ADJUST” menu in the Service mode. *4.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *5.* Press the Yes key to apply the setting. **NOTE** • **If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** *6.* Print a test pattern again and check it.

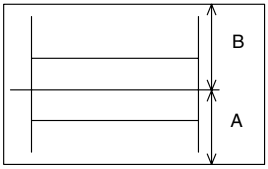
D. CCD MAIN ZOOM

Functions	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the main scanning direction.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST adjustments have been performed • When the Scanner Assy. has been replaced
Adjustment Specification	 4007D052AA •After finishing the PRN MAIN REGIST and PRN SUB REGIST adjustments. •Place the printed test pattern on the Original Glass, and make a copy of it. •Adjust the width of D in the copy of the test pattern so that the following specification is met. Specifications 100 ± 0.5 % (Zoom Ratio = Full Size :100%) Setting Range 95 to 105 (1 increment = 0.4 %) The default setting is “100”
Adjustment Instruction	If the width of D in the test pattern is longer than the specified width. ..... Decrease the setting. If the width of D in the test pattern is shorter than the specified width. ..... Increase the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Place the test pattern on the Original Glass and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray1 to make the test copy.** *4.* Check that the width of D in the copy of the test pattern meets the specification. Calculation: (1 – Width of D in the document ÷ Width of D in the copy) × 100 If the width of D is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Place the test pattern on the Original Glass again, make another test copy, and check it.**

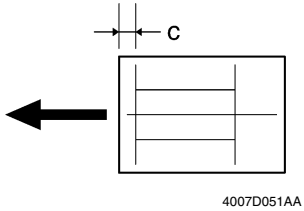
E. CCD SUB ZOOM

Functions	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST adjustments have been performed • When the Scanner Assy. has been replaced
Adjustment Specification	 4007D053AA •After finishing the PRN MAIN REGIST and PRN SUB REGIST adjustments. •Place the printed test pattern on the Original Glass, and make a copy of it. •Adjust the width of E in the copy of the test pattern so that the following specification is met. Specifications 200 ± 0.5 % (Zoom Ratio = Full Size :100%) Setting Range 95 to 105 (1 increment = 0.4 %) The default setting is “100”
Adjustment Instruction	If the width of E in the test pattern is longer than the specified width. ..... Decrease the setting. If the width of E in the test pattern is shorter than the specified width. ..... Increase the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Place the test pattern on the Original Glass and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray1 to make the test copy.** *4.* Check that the width of E in the copy of the test pattern meets the specification. Calculation: (1 – Width of E in the document ÷ Width of E in the copy) × 100 If the width of E is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Place the test pattern on the Original Glass again, make another test copy, and check it.**

F. CCD MAIN REGIST

Functions	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the main scanning direction.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD MAIN ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the Scanner Assy. has been replaced
Adjustment Specification	 1382D011AA •After finishing the PRN MAIN REGIST & PRN SUB REGIST and CCD MAIN ZOOM adjustments. •Place the printed test pattern on the Original Glass, and make a copy of it. •Adjust the amount that widths A and B in the printed test pattern are shifted so that the following specification is met. Specifications 0 ± 2.0 mm Setting Range 90 to 110 (1 increment = 0.5 mm) The default setting is “100”
Adjustment Instruction	If the width of A is less than the width of B..... Increase the setting. If the width of B is less than the width of A..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Place the test pattern on the Original Glass and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray1 to make the test copy.** *4.* Check the amount that widths A and B in the copy of the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Place the test pattern on the Original Glass again, make another test copy, and check it.**

G. CCD SUB REGIST

Functions	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the Scanner Assy. has been replaced
Adjustment Specification	 4007D051AA •After finishing the PRN MAIN REGIST & PRN SUB REGIST and CCD SUB ZOOM adjustments. •Place the printed test pattern on the Original Glass, and make a copy of it. •Adjust the width of C in the printed test pattern so that the following specification is met. Specifications 20 ± 3.0 mm Setting Range 90 to 110 (1 increment = 0.5 mm) The default setting is “100”
Adjustment Instruction	If the width of C in the test pattern is longer than the specified width ..... Increase the setting. If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Place the test pattern on the Original Glass and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray1 to make the test copy.** *4.* Check that the width of C in copy of the test pattern meets the specification. If the width of C is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Place the test pattern on the Original Glass again, make another test copy, and check it.**

H. ADF SUB ZOOM

☞ For details, see DF-501 Service Manual.

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction when using the Automatic Document Feeder.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced

I. ADF MAIN REGIST

☞ For details, see DF-501 Service Manual.

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction when using the Automatic Document Feeder.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD MAIN ZOOM adjustments have been performed • After the ADF SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced

J. ADF SUB REGIST

☞ For details, see DF-501 Service Manual.

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction when using the Automatic Document Feeder.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD SUB ZOOM adjustments have been performed • After the ADF SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced

13.3.3 COUNTER

- The counter values can be displayed.

A. TOTAL COUNTER

Functions / Use	• To display the total number of pages used.
Setting/Procedure	COPY : Number of copies printed PRINT : Number of computer printouts printed • Test prints made in Service mode to check the operation are not counted.

B. PM COUNTER

Functions / Use	• To display the number of times that PM parts are used.
Setting/Procedure	• To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

C. I/C COUNTER

Functions / Use	• To display the total number of times that the Drum Cartridge has been used.
Setting/Procedure	• To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

D. APPLICATION COUNTER

Functions / Use	• To display the number of pages used with each application.
Setting/Procedure	COPY PRINT : Number of copies printed FAX RX PRINT : Number of Fax reception printed. REPORT PRINT : Number of Report printed. PC PRINT : Number of computer printouts printed FAX TX PAGE : Number of Fax transmitting pages. MAIL TX PAGE : Number of Mail transmitting pages. • To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

E. SCAN COUNTER

Functions / Use	• To display the number of scans made.
Setting/Procedure	MONOCHROME : Number of monochrome scans COLOR : Number of color scans • Scans made while making copies are not counted. • To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

F. PRINTER JAM COUNTER

Functions / Use	• To display the number of misfeeds that occurred while printing.
Setting/Procedure	• To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

G. ADF JAM COUNTER

Functions / Use	• To display the number of misfeeds that occurred while using the Automatic Document Feeder.
Setting/Procedure	• To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

H. TROUBLE COUNTER

Functions / Use	• To display the number of times each error was detected.
Setting/Procedure	C0045 :Fuser fan error C0210 :Transfer voltage error C0500 :Fuser Warm up error C0510 :Fuser temperature low C0520 :Fuser overheat C0650 :Home sensor error / Scanner motor error C1200 :ASIC memory abnormal C1300 :Polygon mirror motor error C133B :Communication with option error C133C :Modem error C133D :ROM checksum error C13F0 :Laser error C1468 :Parameter Chip error C14A3 :IR lamp malfunction • To clear the counter data, use the functions on the “CLEAR DATA” menu of Service mode.

13.3.4 DISPLAY

- Various information can be displayed.

Function	Purpose	Setting Details/Precautions
MAIN F/W VER.	To display the version of the Copier firmware.	
ENGINE F/W VER.	To display the version of the engine firmware.	
PCL F/W VER.	To display the version of the PCL firmware.	
NIC F/W VER.	To display the version of the NIC firmware.	
MAIN RAM SIZE	To display the size of the main memory.	
PCL RAM SIZE	To display the size of the PCL memory.	
SERIAL NO.	To display the serial number of the main unit. • Once the serial number is specified, “SERIALNO.” on the “ADJUST” menu cannot be set again.	
CUSTOMER ID	To display the customer ID for the main unit.	
TC TYPE	To specify the type of Toner Cartridge that should be installed in the main unit. • Once the type of Toner Cartridge is specified, “TC TYPE” on the “ADJUST” menu cannot be set again. <Types of Toner Cartridges> • Europe: Toner Cartridge 906 A • Others: Toner Cartridge 907 B • North/ South America: Toner Cartridge 908 C	• The default setting differs depending on the marketing area.

Toner Cartridge Type	Setting
(No Toner Cartridge)	0
(Not Used)	1
A	2
B	3
(Not Used)	4
C	5
(Not Used)	6
(Not Used)	7
(Not Used)	8
(Not Used)	9
(Not Used)	10
(Not Used)	11

*: bizhub 161f only

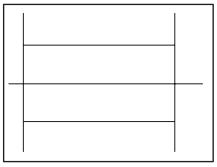
13.3.5 FUNCTION

- The service functions (paper feed test and image printing) can be checked and adjusted.

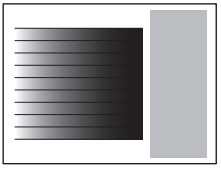
A. PAPER FEED TEST

Functions	• To check the paper feeding in the paper take-up/transport sections without printing on the paper.
Use	• When a paper misfeed occurs
Setting/Procedure	*1.* Select the paper tray. *2.* Press the Start key to begin testing paper feeding. *3.* Press the Stop key to stop testing paper feeding.

B. PRINT TEST PATTERN 1

Functions	• To print the test pattern for adjusting the image.  4980S530AA
Use	• If there is tilt or when registration or zoom ratio adjustments are performed
Setting/Procedure	*1.* Select the paper tray. *2.* Select the test pattern 1. *3.* Press the Start key to print the test pattern.

C. PRINT TEST PATTERN 2

Functions	• To print the test pattern for halftones and gradations.  4980S531AA
Use	• When checking density and pitch irregularities • When checking reproducibility of gradations
Setting/Procedure	*1.* Select the paper tray. *2.* Select the test pattern 2. *3.* Press the Start key to print the test pattern.

D. ADF FEED TEST

Functions	• To check the paper feeding in the paper take-up/transport sections in the Automatic Document Feeder.
Use	• When a document misfeed occurs
Setting/Procedure	*1.* Load paper into the Automatic Document Feeder. *2.* Press the Start key to begin testing paper feeding. *3.* Press the Stop key to stop testing paper feeding.

E. COPY ADF GLASS AREA

Functions	• To check for dirt in the scanning section of the Automatic Document Feeder.
Use	• If spots appear in the copies
Setting/Procedure	*1.* Load A4 or Letter paper into Tray1. *2.* Press the Start key to start the “COPY ADF GLASS AREA” function. *3.* Two copy samples are fed out. *4.* Check that no spots appear in the copy samples. *5.* Press the Stop key to stop the “COPY ADF GLASS AREA” function.

F. CCD MOVE TO HOME

Functions	• To move the scanner to its home position in order to secure the scanner.
Use	• When transporting the machine
Setting/Procedure	**NOTE** • **When transporting the machine, be sure to move the scanner to its home position and secure it with the stopper at the bottom left of the IR.**

G. UPLOAD FIRMWARE

Functions/Use	• Download firmware from this machine to remote side, after setup of remote side location.
Setting/Procedure	• Machine will dial automatically and copy the EPROM data to remote side machine. • For details, refer to ADJUSTMENT.

H. FAX RES. COPY TEST

Functions	• Fax resolution copy test
Use	• To check whether the encoding/ decoding process is correct
Setting/Procedure	• The paper source is fixed to Tray1(MP).(Tray cannot be changed.) • When A4 or Letter is not loaded in Tray1, operation of printing is not performed. **NOTE** • **If an error is displayed during the test, execute “SERVICE MODE/CLEAR DATA/DRAM CLEAR.”**

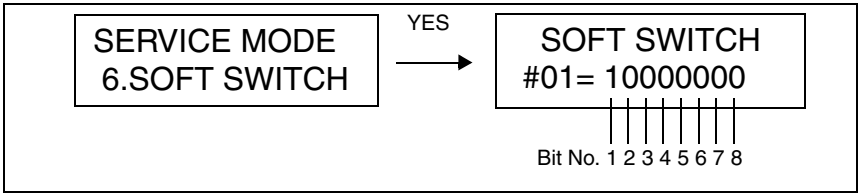
I. SCAN TEST

Functions	• To check the lighting of the Exposure Lamp and the movement of the scanner.
Use	• If the scanner malfunctions
Setting/Procedure	*1.* Press the Start key to begin the scanner test. *2.* Press the Stop key to stop the scanner test.

13.3.6 Soft Switch Function

- Refer to the chapter of soft switch for the explanation of soft switch.

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A. KEY DEFINITION FOR SOFT SWITCH

Key	Definition
▼	Soft Switch Number Forward.
▲	Soft Switch Number Backward.
YES	Update Soft Switch by current setting.
NO/STOP	Exit Soft Switch setting
ONE TOUCH	• 1 - 15 of the soft switch numbers uses and selects an one-touch key. • 16 - 64 of the soft switch numbers uses and selects ↓ key.

13.3.7 REPORT

- The following list is selected, and press YES key.
- After service mode ends, the list is automatically printed.

No.	Indication on LCD
1	SERVICE DATA LIST
2	ERROR CODE LIST
3	T.30 PROTOCOL LIST

A. SERVICE DATA LIST

- Print service data list report and Error log history list.
- Service Data list includes the following items:

1. Report title

2. Soft switch list: Soft switch is displayed by HEX No.
example)
When the setting of SOFT SWITCH #01 is 0000 0001 (Bit No. 8765 4321)", it is written as 20.

Hex-binary conversion list		HEX															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Bit no.	4 (8)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	3 (7)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	2 (6)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
	1 (5)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

3. Communication history and counter
4. Mailbox ID & Password
5. RX in memory password
6. Admin. password
7. Section number password
8. ROM ID

- Error log history list includes the following items:

No.	Item	Description
1	Index	Index number from 0 - 9999
2	Error	Error code number
3	Maker	NSF frame maker code
4	Tell.	Remote side or TX side telephone number for that transaction

(1) Service Data List (example)

SERVICE DATA LIST

(example)
SW01 = Hex 01 = 0000 0001
Bit no. = 8 7 6 5 4 3 2 1
Bit No.8 = 0 Bit No.4 =0
Bit No.7 = 0 Bit No.3 =0
Bit No.6 = 0 Bit No.2 =0
Bit No.5 = 0 Bit No.1 =1

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12
MARKETING AREA=STANDARD
SHIPMENT DESTINATION= METRIC

-- SOFT SWITCH --

SW01-SW16	01	20	80	0C	00	00	07	61	00	81	00	80	10	00	01	03
SW17-SW32	00	00	68	00	80	06	00	00	00	28	00	A7	14	68	00	00
SW33-SW48	C0	82	10	8A	00	C1	00	08	00	00	00	04	00	06	00	89
SW49-SW64	01	00	00	00	00	B0	00	00	00	00	00	21	0F	00	80	10

--COMMUNICATION HISTORY & COUNTER --

000000: ECM RX TIME	000000: ECM TX TIME
000001: G3 RX TIME	000000: G3 RX PAGE
000000: V.17 14.4K	000000: V.17 12K
000000: V.17 9.6K	000000: V.17 7.2K
000000: V.29 9.6K	000000: V.29 7.2K
000000: V.27 4.8K	000001: V.27 2.4K
000000: G3 TX TIME	000000: G3 TX PAGE
000000: V.17 14.4K	000000: V.17 12K
000000: V.33 14.4K	000000: V.33 12K
000000: V.17 9.6K	000000: V.17 7.2K
000000: V.29 9.6K	000000: V.29 7.2K
000000: V.27 4.8K	000000: V.27 2.4K
000007: V.34 RX TIME	000007: V.34 RX PAGE
000002: 33.6K	000005: 31.2K
000000: 28.8K	000000: 26.4K
000000: 24.0K	000000: 21.6K
000000: 19.2K	000000: 16.8K
000000: 9.6K	000000: 7.2K
000000: 4.8K	000000: 2.4K
000001: V.34 TX TIME	000015: V.34 TX PAGE
000001: 33.6K	000006: 31.2K
000000: 28.8K	000000: 26.4K
000000: 24.0K	000000: 21.6K
000000: 19.2K	000000: 16.8K
000000: 9.6K	000000: 7.2K
000000: 4.8K	000000: 2.4K
000007: JBIG TX TIME	000007: JBIG RX TIME
000000: TOTAL COUNTER	
000000: COPY PRINT	000000: FAX PRINT
000000: REPORT PRINT	000000: PC PRINT

-- MAILBOX ID & PW --

NO.1 ID=	PW=	NO.2 ID=	PW=	NO.3 ID=	PW=
NO.4 ID=	PW=	NO.5 ID=	PW=		

SERVICE DATA LIST

NAME:ABC 123
TEL:1234567
DATE:Dec.01.2003 15:12

-- ADJUST --

PRINT MAIN REGIST: 77	PRN: SUB REGIST: 100
CCD MAIN ZOOM: 100	CCD: SUB ZOOM: 100
CCD MAIN REGIST: 100	CCD SUB REGIST: 100
ADF SUB ZOOM: 100	
ADF MAIN REGIST: 100	ADF SUB REGIST: 100
SERIAL NUMBER: 12345678	CUSTOMER ID: 1
TC TYPE: 1	000000: G3 TX PAGE

RX IN MEMORY:
ADMIN.PASSWORD: 000000
MAIN RAM SIZE: 16MB
PCL RAM SIZE: 0MB

-- ROM ID --
01/01/2004 v1.00-0

(2) Error Log History List (example)

The following table is the error log history. The table keeps the last 40 records only.

ERROR LOG HISTORY LIST

Index	Error	Maker	Tell
0001:	0070	49EE	88634733507
0002:	00A0	49EE	
0003:	0070	0000	
0004:	0070	0000	
0005:	0070	0000	
0006:	0070	0000	
0007:	0070	0000	
0008:	0070	0000	
0009:	0070	0000	
0010:	0070	0000	
0011:	0070	0000	
0012:	0070	0000	
0013:	0070	0000	
0014:	0070	0000	
0015:	0070	0000	
0016:	0070	0000	
0017:	0070	0000	
0018:	0070	0000	
0019:	0020	49EE	123
0020:	0070	0000	

NSF signal 3rd. and 4th byte

Keep 20 digits of TSI or CSI

B. ERROR CODE LIST

- Print out error code as following table. (example)

☞ See Troubleshooting Error Code.

ERROR CODE LIST

CODE	ERROR TIMES	CODE	ERROR TIMES	CODE	ERROR TIMES
0001	00000000	0002	00000000	0003	00000000
0004	00000000	0005	00000000	0006	00000000
0007	00000000	0008	00000000	0009	00000000
000A	00000000	000B	00000000	000C	00000000
000D	00000000	000E	00000000	000F	00000000
0010	00000000	0011	00000000	0012	00000000
0013	00000000	0014	00000000	0015	00000000
0016	00000000	0017	00000000	0018	00000000
0019	00000000	001A	00000000	001B	00000000
001C	00000000	001D	00000000	001E	00000000
001F	00000000	0020	00000000	0021	00000000
0022	00000000	0023	00000000	0024	00000000
0025	00000000	0026	00000000	0027	00000000
0028	00000000	0029	00000000	002A	00000000
002B	00000000	002C	00000000	002D	00000000
002E	00000000	002F	00000000	0030	00000000
0031	00000000	0032	00000000	0033	00000000
0034	00000000	0035	00000000	0036	00000000
0037	00000000	0038	00000000	0039	00000000
003A	00000000	003B	00000000	003C	00000000
003D	00000000	003E	00000000	003F	00000000
0040	00000000	0041	00000000	0042	00000000
0043	00000000	0044	00000000	0045	00000000
0046	00000000	0047	00000000	0048	00000000
0049	00000000	004A	00000000	004B	00000000
004C	00000000	004D	00000000	004E	00000000
004F	00000000	0050	00000000	0051	00000000
0052	00000000	0053	00000000	0054	00000000
0055	00000000	0056	00000000	0057	00000000
0058	00000000	0059	00000000	005A	00000000
005B	00000000	005C	00000000	005D	00000000
005E	00000000	005F	00000000	0060	00000000
0061	00000000	0062	00000000	0063	00000000
0064	00000000	0065	00000000	0066	00000000
0067	00000000	0068	00000000	0069	00000000
006A	00000000	006B	00000000	006C	00000000
006D	00000000	006E	00000000	006F	00000000
0070	00000002	0071	00000000	0072	00000008
0073	00000000	0074	00000000	0075	00000000
0076	00000000	0077	00000000	0078	00000017
0079	00000000	007A	00000000	007B	00000000
007C	00000000	007D	00000000	007E	00000000
007F	00000000	0080	00000000	0081	00000000
0082	00000000	0083	00000001	0084	00000000
0085	00000000	0086	00000000	0087	00000000
0088	00000000	0089	00000000	008A	00000000
008B	00000000	008C	00000000	008D	00000000
008E	00000000	008F	00000000	0090	00000000
0091	00000001	0092	00000000	0093	00000000
0094	00000000	0095	00000000	0096	00000000
0097	00000000	0098	00000000	0099	00000000
009A	00000000	009B	00000000	009C	00000000
009D	00000000	009E	00000000	009F	00000000
00A0	00000024	00A1	00000000	00A2	00000000
00A3	00004558	00A4	00000002	00A5	00000000
00A6	00000000	00A7	00000006	00A8	00000000
00A9	00000001	00AA	00000000	00AB	00000000
00AC	00000000	00AD	00000000	00AE	00000000
00AF	00000000	00B0	00000000	00B1	00000000
00B2	00000000	00B3	00000000	00B4	00000000
00B5	00000000	00B6	00000000	00B7	00000000
00B8	00000000	00B9	00000000	00BA	00000000
00BB	00000000	00BC	00000000	00BD	00000000
00BE	00000000	00BF	00000000	00C0	00000000
00C1	00000000	00C2	00000000	00C3	00000000
00C4	00000000	00C5	00000000	00C6	00000000
00C7	00000000	00C8	00000000	00C9	00000000
00CA	00000000	00CB	00000000	00CC	00000000
00CD	00000000	00CE	00000000	00CF	00000000
00D0	00000000	00D1	00000000	00D2	00000000
00D3	00000000	00D4	00000000	00D5	00000000
00D6	00000000	00D7	00000000	00D8	00000000
00D9	00000000	00DA	00000000	00DB	00000000
00DC	00000000	00DD	00000000	00DE	00000000
00DF	00000000	00E0	00000000	00E1	00000000
00E2	00000000	00E3	00000000	00E4	00000000
00E5	00000000	00E6	00000000	00E7	00000000
00E8	00000000	00E9	00000000	00EA	00000000
00EB	00000000	00EC	00000000	00ED	00000000
00EE	00000000	00EF	00000000	00F0	00000000
00F1	00000000	00F2	00000000	00F3	00000000
00F4	00000000	00F5	00000000	00F6	00000000
00F7	00000000	00F8	00000000	00F9	00000000
00FA	00000000	00FB	00000000	00FC	00000000
00FD	00000000	00FE	00000006	00FF	00000002

13.3.8 T.30 PROTOCOL LIST

- Print out T.30 or V8 protocol after communication.

1. SESSION NUMBER
2. FUNCTION NAME
3. DESTINATION NAME/TELEPHONE NUMBER
4. COMMUNICATION DATE & TIME
5. TOTAL PAGE NUMBER FOR THIS SESSION
6. COMMUNICATION SPEED AND ECM MODE
7. COMMUNICATION RESULT
8. T.30 COMMAND SENT BY LOCAL FAX
9. T.30 COMMAND RECEIVED FROM REMOTE FAX
10. T.30 FRAME THAT INCLUDES ADDRESS & CONTROL & DATA

A. V.17 Communication (example)

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PROTOCOL MONITOR REPORT

NAME: ABC
TEL:886 3 4733507
DATE: APR.10'97 12:20

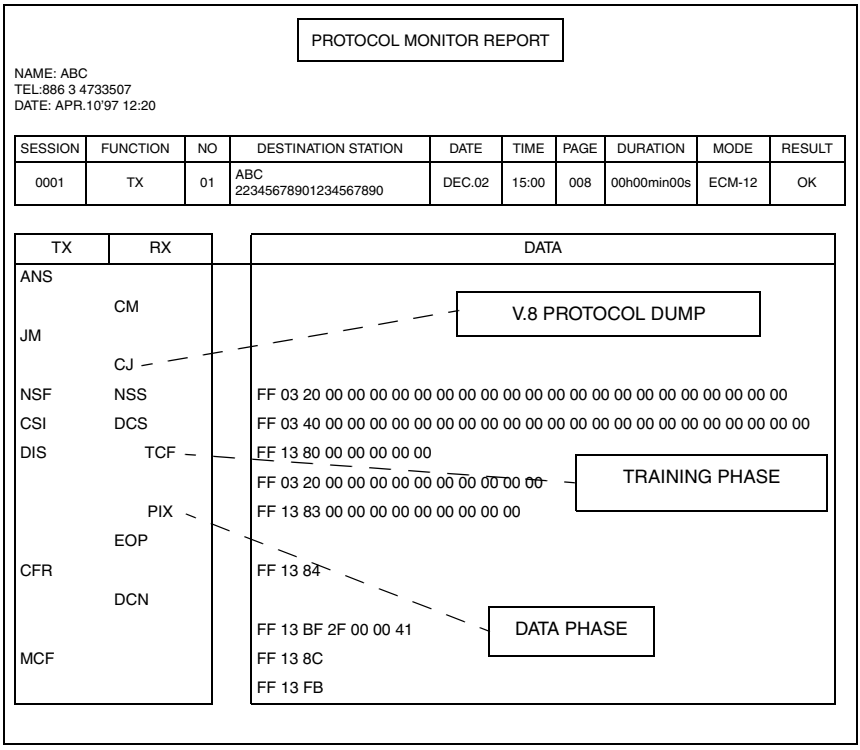
SESSION	FUNCTION	NO	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	01	ABC 22345678901234567890	DEC.02	15:00	008	00h00min00s	ECM-12	OK

TX	RX	DATA
NSF		FF 03 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CSI		FF 03 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DIS		FF 13 40 00 00 00 00 00
	NSS	FF 03 00 00 00 00 00 00 00 00 00 00 00
	DCS	FF 03 00 00 00 00 00 00 00 00 00 00
	TCF	00 00 00 00 00 00 00 00 00 00 00 00
CFR		FF 13 84
	PIX	
	EOP	FF 13 BF 2F 00 00 41
MCF		FF 13 8C
	DCN	FF 13 FB

DATA PHASE

TRAINING PHASE

B. V.34 Communication (example)



13.3.9 ADMIN. REGISTRATION (Administrator number registration)

- The administrator number (0 to 999999) required for the Administrator mode of Utility is programmed or changed.

A. Remote monitor

Setting value	Description	Default
LIMITED	**Enable remote monitor function limitedly**	❍
FULL	Enable remote monitor function fully	
OFF	Disable remote monitor function	

13.3.10 FIXED ZOOM CHANGE

Functions/Use	• The fixed zoom ratios can be changed.
Setting/Procedure	*1.* Select the fixed zoom ratio that you wish to change. *2.* Use the 10-Key Pad to type in the desired fixed zoom ratio.

Default fixed zoom ratios and setting ranges according to marketing area

• Metric

Setting Name	Initial fixed zoom ratio	Setting Range
Reduction 2	70%	51% to 70%
Reduction 1	81%	71% to 99%
Expansion 1	115%	101% to 140%
Expansion 2	141%	141% to 199%

• Inch

Setting Name	Initial fixed zoom ratio	Setting Range
Reduction 2	64%	51% to 64%
Reduction 1	78%	65% to 99%
Expansion 1	129%	101% to 153%
Expansion 2	154%	154% to 199%

13.3.11 FACTORY TEST

• This test is for factory adjustment only and should NOT be used.

	Functions/Use
SIGNAL TEST	• This test is for factory adjustment only and should NOT be used.
RELAY TEST	• This test is for factory adjustment only and should NOT be used.
DIAL TEST	• This test is for factory adjustment only and should NOT be used.
VOLUME TEST	• To check the volume of the speaker.
PANEL BUZZER TEST	• To check the operation of the display and all indicators and buttons. • When the panel buzzer test are finish, press the panel reset key twice.
RAM TEST	• To test reading and writing of the memory.

13.3.12 CLEAR DATA

• Each type of data can be cleared.

A. DRAM CLEAR

Functions/Use	• To clear the settings for the functions listed at the right and return the functions to their default settings. • Clear all data in the memory file and free all memory to 100%, the user data are not affected. But only clear DRAM data on PWB-P.
Setting/Procedure	**NOTE** • **Not include DRAM data on NIC.**

B. SRAM CLEAR

Functions	• To clear the settings for the functions listed at the right and return the functions to their default settings.
Use	• The following items are cleared (initialization).
Setting/Procedure	**NOTE** **• Before executing "SRAM CLEAR," be sure to record the setting values that are to be initialized through "SRAM CLEAR."** **• For the record of the setting values, it is a good idea to have reports and lists printed.** **• Some setting values are not included any of these reports or lists. Be sure to make a note of them separately.** **• After "SRAM CLEAR" has been executed, make necessary entries of data again based on the setting values recorded.**

MODE	Initialized Items		Default	Report/ List	
UTILITY MODE	MACHINE SETTING	BUZZAR VOLUM	LOW	MACHINE STATUS LIST	☞ 57
	ADMIN. MANEGEMENT	REMOTE MONITOR	LIMITED	None	None
	FAX REGISTRATION	ONE TOUCH DIAL SPEED DIAL GROUP DIAL PROGRAM DIAL BATCH TX MAIL BOX	None None None None None None	ONE TOUCH LIST SPEED DIAL LIST KEY SETTING LIST MACHINE STATUS LIST	☞ 57
	TX OPERATION	SCAN CONTRAST RESOLUTION DEFAULT TX HEADER	0 STD MEM. TX ON	MACHINE STATUS LIST	☞ 57
	RX OPERATION	MEMORY RX MODE NO. of RINGS REDUCTION RX RX PRINT RX MODE FORWARD FOOTER SELECT TRAY CLOSED NETWORK\	OFF 2 ON MEMORY RX AUTO RX OFF OFF ENABLE OFF	MACHINE STATUS LIST	☞ 57
	COMM. SETTING	TONE/ PULSE LINE MONITOR PSTN/ PBX	TONE LOW PSTN	MACHINE STATUS LIST	☞ 57
	REPORT	ACTIVITY REPORT RESERV. REPORT TX RESULT REPORT RX RESULT REPORT	ON OFF OFF OFF	MACHINE STATUS LIST	☞ 57
	INIRTIAL USER DATA	DATE & TIME USER FAX NO. USER NAME	None None None	MACHINE STATUS LIST	☞ 57
	NETWORK SETTING	IP ADDRESS SUBNET MASK GATE WAY DNS CONFIG GATE WAY TX	AUTO None None DISABLE DISABLE	MACHINE STATUS LIST	☞ 57

MODE	Initialized Items		Default	Report/ List	
UTILITY MODE	E-MAIL SETTING 1	SENDER NAME E-MAIL ADDRESS SMTP SERVER SMTP TIMEOUT TEXT INSERT DEFAULT SUBJECT	None None None 60 OFF None	MACHINE STATUS LIST	☞ 57
	E-MAIL SETTING 2	POP3 SERVER POP3 PORT NO. POP3 TIMEOUT POP3 ACCOUNT POP3 PASSWORD AUTO RECEPTION REPLAY ADDRESS HEADER PRINT	None None None None None OFF None OFF	MACHINE STATUS LIST	☞ 57
	SCAN SETTING	RESOLUTION IMAGE FROMAT CODING METHOD	300 X 300 TIFF MH	MACHINE STATUS LIST	☞ 57
TX/RX Result (Activity Data)			None	TX RESULT REPORT RX RESULT REPORT ACTIVITY REPORT	☞ 57
Image Data of DRAM memory file			None	MEMORY DATA LIST MEMORY IMAGE PRINT	☞ 57
SERVICE MODE	SERVICE'S CHOICE	MARKETTING AREA	STANDARD	SERVICE DATA LIST	☞ 148
		TX SPEED RX SPEED TX LEVEL RX LEVEL DTMF LEVEL CNG LEVEL CED LEVEL ECM MODE CODING SCHEME PROTOCOL REPORT	V.34 V.34 -3 dBm to -8 dBm -37dBm to -42 dBm -9 dBm -11 dBm -11 dBm ON JBIG OFF	**None**	**None**

C. MEMORY CLEAR

Functions	• To clear the settings for the functions listed at the right and return the functions to their default settings.
Use	• The following items are cleared (initialization).
Setting/Procedure	**NOTE** **• Before executing "MEMORY CLEAR," be sure to record the setting values that are to be initialized through "MEMORY CLEAR."** **• For the record of the setting values, it is a good idea to have reports and lists printed.** **• Some setting values are not included any of these reports or lists. Be sure to make a note of them separately.** **• After "MEMORY CLEAR" has been executed, make necessary entries of data again based on the setting values recorded.**

MODE	Initialized Items		Default		Report/ List	
UTILITY MODE	MACHINE SETTING	AUTO PANEL RESET ENERGY SAVE MODE DENSITY(ADF) DENSITY(BOOK) PRINT DENSITY LCD CONTRAST LANGUAGE LAMP OFF TIME BUZZAR VOLUM INITIAL MODE	1 15MIN. MODE1 MODE1 0 0 ENGLISH MODE1 LOW COPY		MACHINE STATUS LIST	☞ 57
	PAPER SOURCE SETUP	TRAY1 PAPER	METRIC A4/ PLAIN	INCH LETTER/ PLAIN	MACHINE STATUS LIST	☞ 57
		TRAYSETTING	CONTINUOUS			
	ADMIN. MANEGEMENT	REMOTE MONITOR	LIMITED		None	None
	COPY SETTING	PAPER PRIORITY DENSITY PRIORITY DENSITY LEVEL(A) DENSITY LEVEL(M) OUTPUT PRIORITY RESOLUTION	TRAY1 AUTO 0 0 NON 600X300		MACHINE STATUS LIST	☞ 57
	FAX REGISTRATION	ONE TOUCH DIAL SPEED DIAL GROUP DIAL PROGRAM DIAL BATCH TX MAIL BOX	None None None None None None		ONE TOUCH LIST SPEED DIAL LIST KEY SETTING LIST MACHINE STATUS LIST	☞ 57
	TX OPERATION	SCAN CONTRAST RESOLUTION DEFAULT TX HEADER	0 STD MEM. TX ON		MACHINE STATUS LIST	☞ 57
	RX OPERATION	MEMORY RX MODE NO. of RINGS REDUCTION RX RX PRINT RX MODE FORWARD FOOTER SELECT TRAY CLOSED NETWORK\	OFF 2 ON MEMORY RX AUTO RX OFF OFF ENABLE OFF		MACHINE STATUS LIST	☞ 57
	COMM. SETTING	TONE/ PULSE LINE MONITOR PSTN/ PBX	TONE LOW PSTN		MACHINE STATUS LIST	☞ 57

MODE	Initialized Items		Default		Report/ List	
UTILITY MODE	REPORT	ACTIVITY REPORT RESERV. REPORT TX RESULT REPORT RX RESULT REPORT	ON OFF OFF OFF		MACHINE STATUS LIST	☞ 57
	INIRTIAL USER DATA	DATE & TIME USER FAX NO. USER NAME	None None None		MACHINE STATUS LIST	☞ 57
	NETWORK SETTING	IP ADDRESS SUBNET MASK GATE WAY DNS CONFIG GATE WAY TX	AUTO None None DISABLE DISABLE		MACHINE STATUS LIST	☞ 57
	E-MAIL SETTING 1	SENDER NAME E-MAIL ADDRESS SMTP SERVER SMTP TIMEOUT TEXT INSERT DEFAULT SUBJECT	None None None 60 OFF None		MACHINE STATUS LIST	☞ 57
	E-MAIL SETTING 2	POP3 SERVER POP3 PORT NO. POP3 TIMEOUT POP3 ACCOUNT POP3 PASSWORD AUTO RECEPTION REPLAY ADDRESS HEADER PRINT	None None None None None OFF None OFF		MACHINE STATUS LIST	☞ 57
	SCAN SETTING	RESOLUTION IMAGE FROMAT CODING METHOD	300 X 300 TIFF MH		MACHINE STATUS LIST	☞ 57
SERVICE MODE	SERVICE'S CHOICE	MARKETTING AREA	STANDARD		SERVICE DATA LIST	☞ 148
		TX SPEED RX SPEED TX LEVEL RX LEVEL DTMF LEVEL CNG LEVEL CED LEVEL ECM MODE CODING SCHEME PROTOCOL REPORT	V.34 V.34 -3 dBm to -8 dBm -37dBm to -42 dBm -9 dBm -11 dBm -11 dBm ON JBIG OFF		None	None
	ADJUST	PRN MAINREGIST PRN SUB REGIST CCD MAIN ZOOM CCD SUB ZOOM CCD MAIN REGIST CCD SUB REGIST ADF SUB ZOOM ADF MAIN REGIST ADF SUB REGIST	100 100 100 100 100 100 100 100 100		SERVICE DATA LIST	☞ 148
	ADMIN. REGISTRATION		000000		SERVICE DATA LIST	☞ 148
	FIXED ZOOM CHANGE		METRIC	INCH	None	None
		REDUCTIN 2	70%	64%		
		REDUCTION1	81%	78%		
		EXPANTION1	115%	129%		
		EXPANTION2	141%	154%		
SECURITY		MACHINE COUNTER	ENABLE		None	None

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D. TOTAL CLEAR

Functions/Use	• The following counter are cleared (initialization).
Setting/Procedure	• PM counter • I/C counter • Application counter • Scan counter • Printer jam counter • ADF jam counter • Trouble counter **NOTE** **• After the "TOTAL CLEAR" function is performed, turn the machine off, then on again.** **• The clearance of "TOTAL COUNTER" can not be performed.**

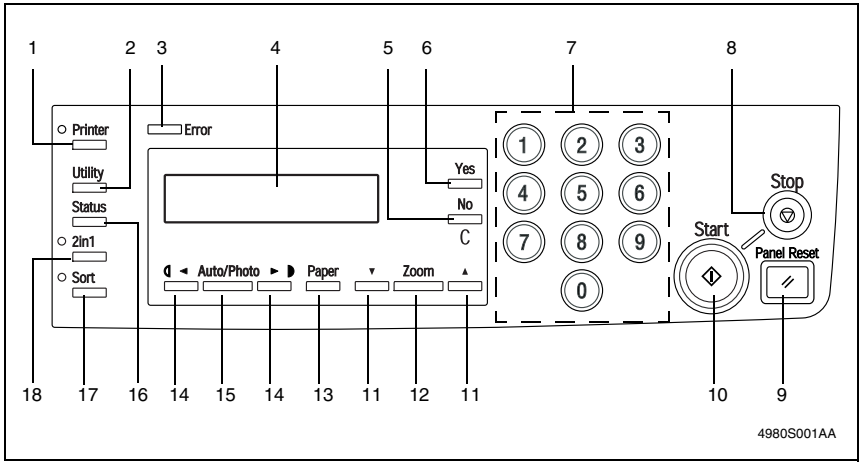
E. Other counter clear

Functions	Use
PM COUNTER	To clear the PM COUNTER value.
I/C COUNTER	To clear the I/C COUNTER value.
APPLICATION COUNTER	To clear the APPLICATION COUNTER value.
SCAN COUNTER	To clear the SCAN COUNTER value.
PRINTER JAM COUNTER	To clear the PRINTER JAM COUNTER value.
ADF JAM COUNTER	To clear the ADF JAM COUNTER value.
TROUBLE COUNTER	To clear the TROUBLE COUNTER value.

14. Board Switch

14.1 Names of control panel parts and their functions

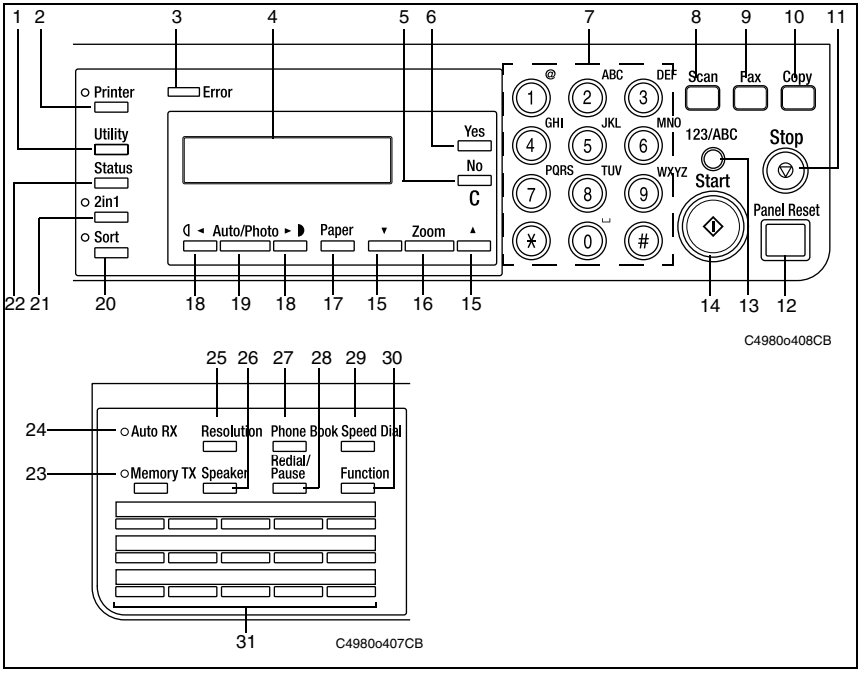
14.1.1 bizhub 160/ bizhub 161



No.	Key Name	Function
1	Printer key	Press to enter Printer mode.
2	Utility key	Press to enter Utility mode.
3	Error lamp	The indicator lights up if an error or malfunction occurs.
4	Display	Shows the number of copies to be made, the zoom ratio, and other settings.
5	No/C key	• Press to reset the number of copies to “1”. • Press to clear various settings. • Press to return to the previous screen. • Press to specify various settings.
6	Yes key	• Press to apply the specified setting. • Press to specify various settings.
7	10-Key Pad	Use to type in the number of copies to be made and any other numeric data.
8	Stop key	• Press to stop the print operation. • Press to stop the scan operation. • The indicator lights up in orange when the machine is brought to a pause or in a print cycle.
9	Panel Reset key	Press to reset all copy functions to their default settings.
10	Start key	• Press to start a scanning operation. • Press to start a print operation. • Press to specify various settings.
11	▲ / ▼ key	• Press to change the zoom ratio between ×0.25 and ×4.00 in ×0.01 increments. • Press to show the various settings and information. • Press to specify various settings.
12	Zoom key	Press to select a zoom ratio from the preset fixed ratios.

No.	Key Name	Function
13	Paper key	Press to select the paper in the desired paper tray.
14	< / > key	• Press to adjust the image density. • Press to specify various settings.
15	Auto/Photo key	Press to change the image density mode.
16	Status key	Press to display each counter value.
17	Sort key	Press to select the “Sort” function.
18	2in1 key	Press to select the “2in1” copy function.

14.1.2 bizhub 160f/ bizhub 161f



No.	Key Name	Function
1	Utility key	Press to enter Utility mode.
2	Printer key	Press to enter Printer mode.
3	Error lamp	The indicator lights up in orange if an error or malfunction occurs.
4	Display	Shows the number of copies to be made, the zoom ratio, and other settings.
5	No/ C key	• Press to reset the number of copies to “1”. • Press to clear the various settings. • Press to return to the previous screen. • Press to specify the various settings.
6	Yes key	• Press to validate the setting just made. • Press to specify the various settings.

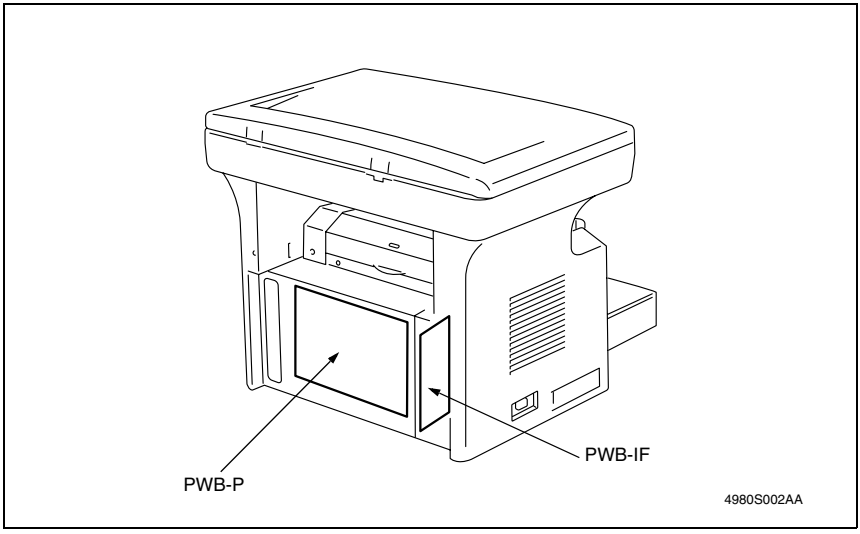
No.	Key Name	Function
7	10-Key Pad	Use to enter the number of copies to be made and any other numeric data. Use to enter text such as a name.
8	Scan key	Press to enter Scan mode. The indicator lights up in green to indicate that the machine is in Scan mode. (Available only when the Internet Fax & Network Scan Kit is installed.)
9	Fax key	Press to enter Fax mode. The indicator lights up in green to indicate that the machine is in Fax mode.
10	Copy key	Press to enter Copy mode. The indicator lights up in green to indicate that the machine is in Copy mode.
11	Stop key	• Press to stop a print cycle. • Press to stop a scanning sequence. • The indicator flashes in orange when the machine is brought to a pause or in a print cycle.
12	Panel Reset key	Press to reset all print functions and settings to their defaults.
13	123/ ABC key	Press to switch the function of the10-Key Pad between typing in numbers and typing in letters.
14	Start key	• Press to start a scanning or print cycle. • Press to specify the various settings. • The indicator lights up in green when the machine can accept print jobs.
15	▲/ ▼ key	• Press to change the zoom ratio in the range between × 0.25 and × 4.00 in × 0.01 increments. • Press to scan through the various settings and information, in order. • Press to specify the various settings.
16	Zoom key	Press to select a zoom ratio from among those fixed ratios available as standard.
17	Paper key	Press to select the paper tray that contains the desired paper.
18	< / > key	• Press to adjust the image density. • Press to specify the various settings.
19	Auto/ Photo key	Press to change the image density mode.
20	Sort key	Press to select the sort function.
21	2in1 key	Press to select the 2in1 function.
22	Status key	Press to view the counters and transmission results. In addition, the list of settings specified for each function and the reports can be printed.
23	Memory TX lamp	Lights up when the memory transmission function is selected.
24	Auto RX lamp	Lights up when the automatic reception function is selected.
25	Resolution key	Use to select the image quality (transmission resolution).
26	Speaker key	• Press to answer the call. • Press again to hang up.
27	Phone Book key	Use to display the information programmed for one-touch dialing, group dialing and speed dialing.

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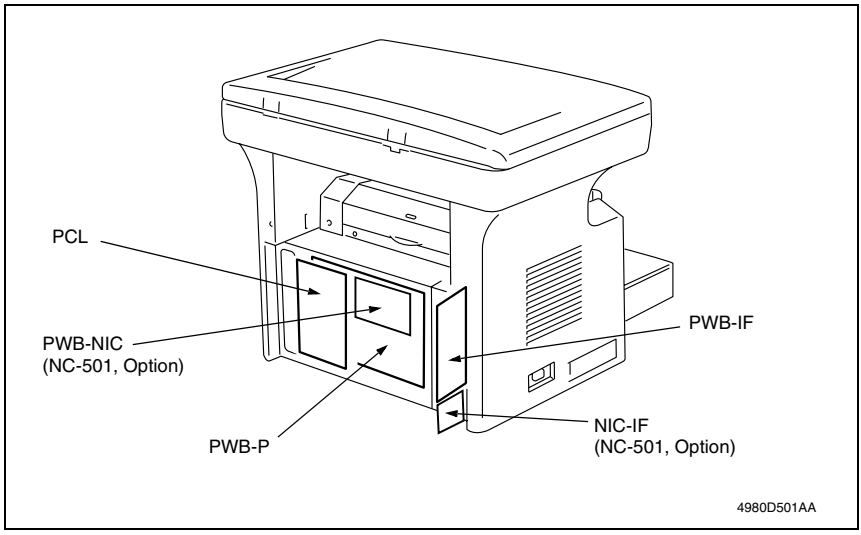
No.	Key Name	Function
28	Redial/Pause key	Re-dials the last number called. During dialing, use to generate a pause when transferring from an internal to an external line or receiving information services.
29	Speed Dial key	Use to dial previously programmed fax numbers represented by 3-digit numbers.
30	Function key	Used to select a function. • BROADCAST (broadcast transmission), TIMER TX (timer transmission), MAILBOX TX (mailbox transmission), PRINT MAILBOX RX (retrieve mailbox faxes), POLLING TX (polling transmission), POLLING RX (polling reception), RELAY INITIATE (relay initiation transmission), CANCEL RESERV. (cancel queued job), TX MODE (transmission mode), Internet fax reception (with the Internet Fax & Network Scan Kit installed)
31	One-touch Dial key	Used to dial previously programmed fax numbers.

14.2 Circuit Board Locations

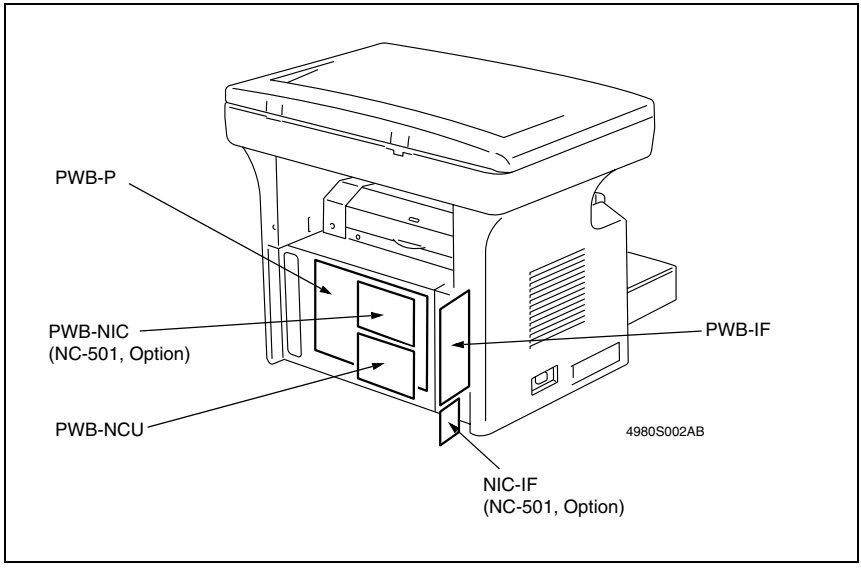
14.2.1 bizhub 160



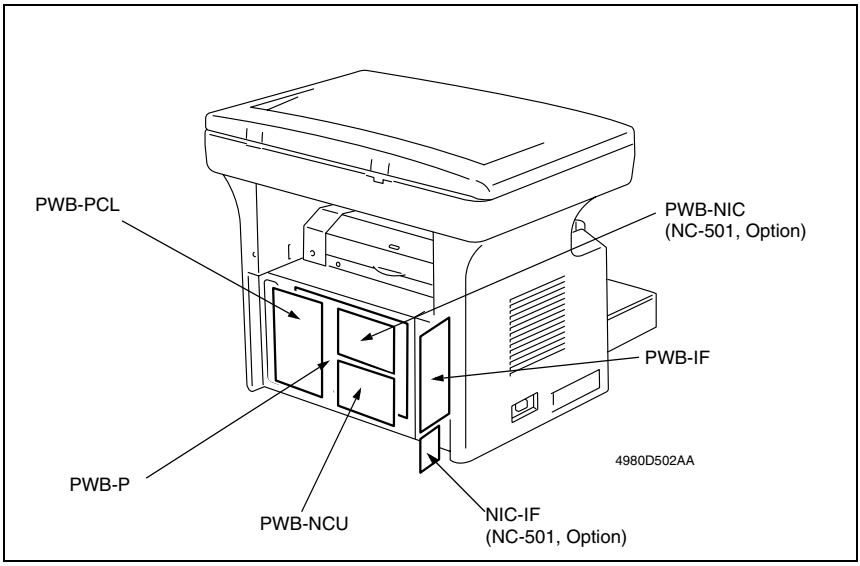
14.2.2 bizhub 161



14.2.3 bizhub 160f

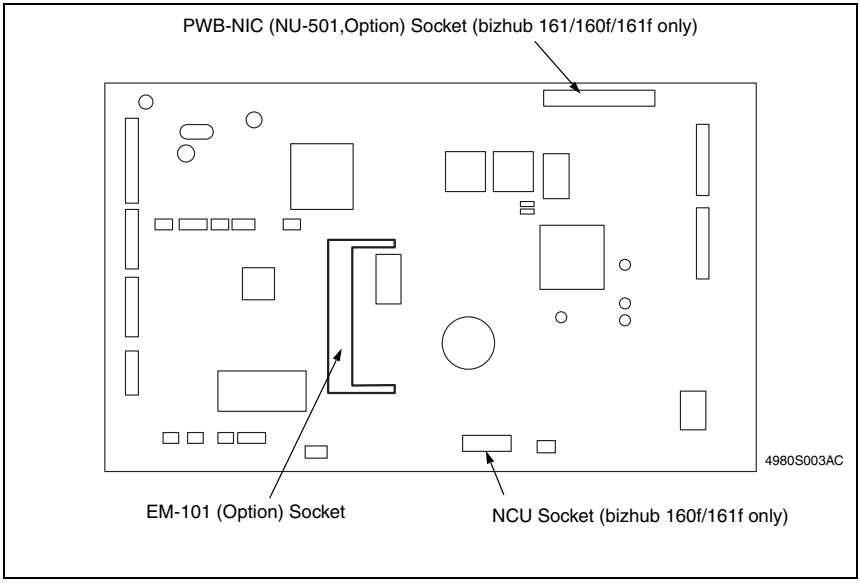


14.2.4 bizhub 161f

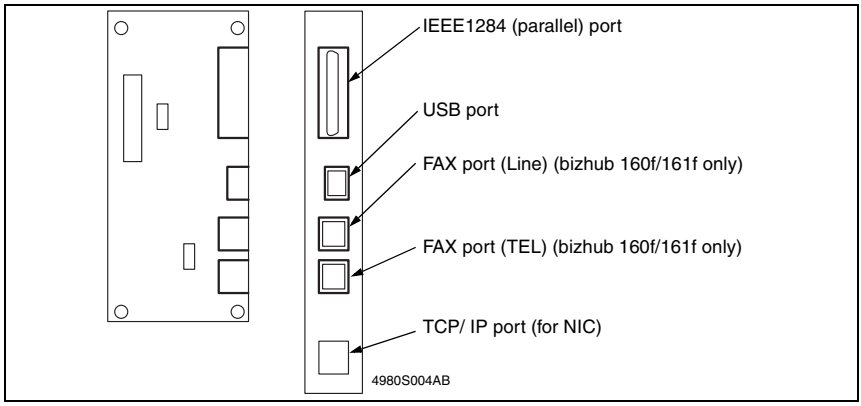


14.3 Functions of switches and parts on PWBs

14.3.1 PWB-P (Controller/Mechanical Control Board)

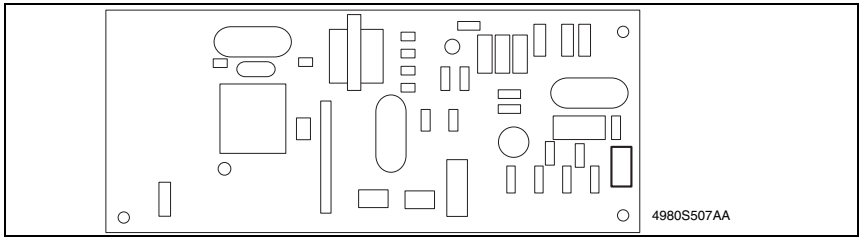


14.3.2 PWB-IF (Interface Board)



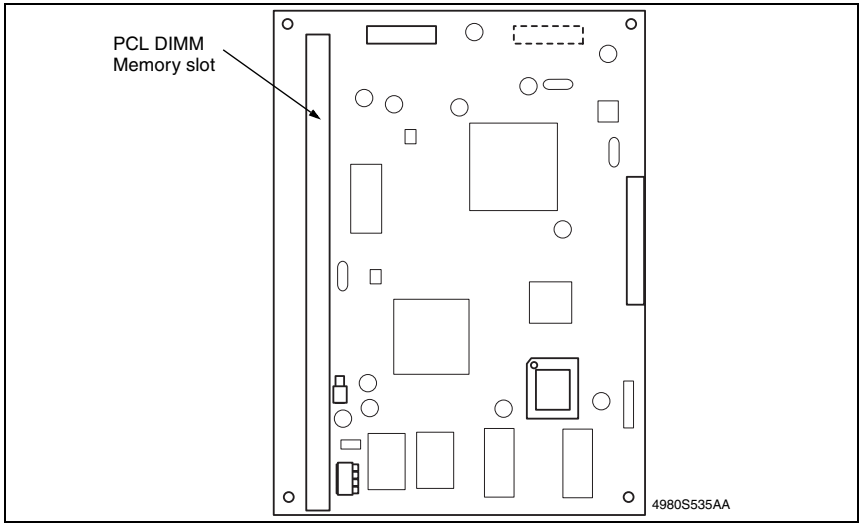
14.3.3 NCU (Network Control Unit Board)

- bizhub 160f, bizhub 161f only



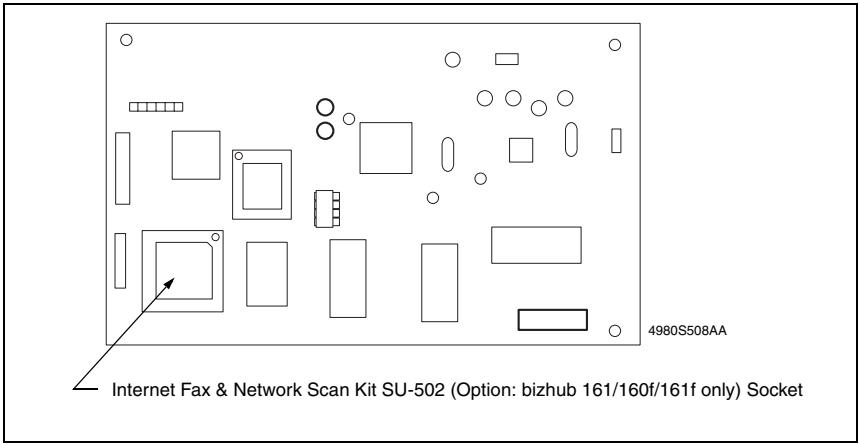
14.3.4 PCL (PCL Controller Board)

- bizhub 161, bizhub 161f only



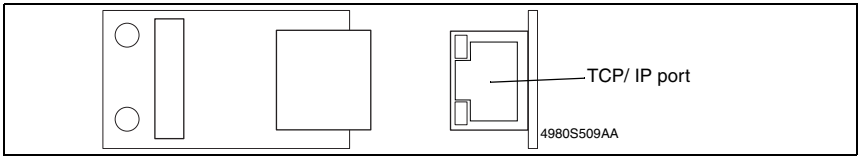
14.3.5 NC-501: PWB- NIC (Network Interface Card Board)

- Option for bizhub 161, bizhub 160f, bizhub 161f



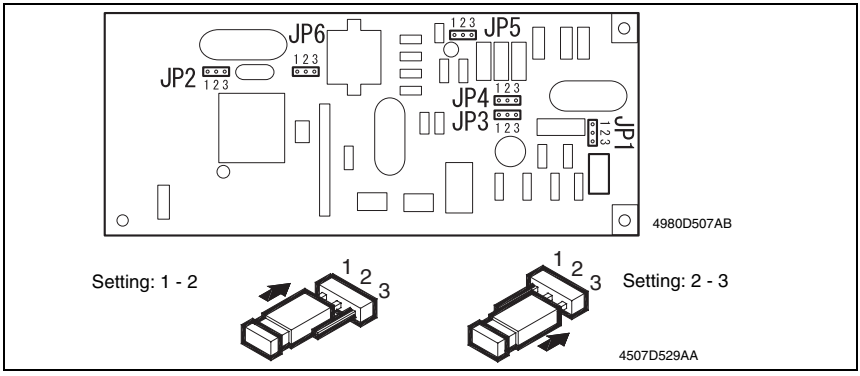
14.3.6 NC-501: NIC-IF (Plate NIC Board)

- Option for bizhub 161, bizhub 160f, bizhub 161f



14.4 Adjustment of jumper switches on NCU board

- Make the correct settings of the jumper switches at six places on the NCU Board according to the applicable marketing area.
- When the NCU Board has been replaced, check that the jumper switches are set as shown below.



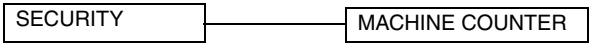
✻ Country Classification Jumper Switch Setting

Type	Jumper Switch	Setting	Country
STD (UL)/ (Others)	JP1	2 - 3	STD (UL): Canada, South America, Taiwan, U.S A. STD (Others): Bahrain, Baltic, Croatia, Hong Kong, Iran, Kuwait, Malaysia, New Zealand, Poland, Qatar, Romania, Russia, Singapore, Slovakia, Slovenia, Ukraine, Others.
	JP2	1 - 2	
	JP3	1 - 2	
	JP4	1 - 2	
	JP5	2 - 3	
	JP6	2 - 3	
TBR-21	JP1	2 - 3	Austria, Belgium, Cyprus, Czech, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Netherlands, Norway, Sweden, Switzerland, U.K,.
	JP2	2 - 3	
	JP3	2 - 3	
	JP4	2 - 3	
	JP5	1 - 2	
	JP6	1 - 2	
Australia/ South Africa	JP1	2 - 3	Australia/ South Africa
	JP2	2 - 3	
	JP3	1 - 2	
	JP4	1 - 2	
	JP5	2 - 3	
	JP6	2 - 3	
China	JP1	2 - 3	China
	JP2	1 - 2	
	JP3	1 - 2	
	JP4	1 - 2	
	JP5	2 - 3	
	JP6	1 - 2	

15. Security Mode

- This mode is used to set various security functions.

15.1 Security Mode function tree



15.2 Security Mode setting procedure

NOTE

- **Be sure to keep the access procedure for the Security mode from any unauthorized persons not involved with service operations.**

15.2.1 Procedure

1. Display the Service mode screen.
2. Press the Stop key, then the 9 key.
3. The Security mode screen appears.

15.2.2 Exiting Procedure

- Press the Panel Reset key.

15.3 Security Mode functions

15.3.1 MACHINE COUNTER

Functions / Use	• To enable or disable copying depending on whether or not the Mechanical Counter is installed.
Setting/Procedure	• The default setting is “ENABLE.” “ENABLE” DISABLE **NOTE** • **If “ENABLE” is selected, copying is possible even if the Mechanical Counter is not installed.**

16. Soft Switch Set (bizhub 160f/bizhub 161f only)

16.1 Description

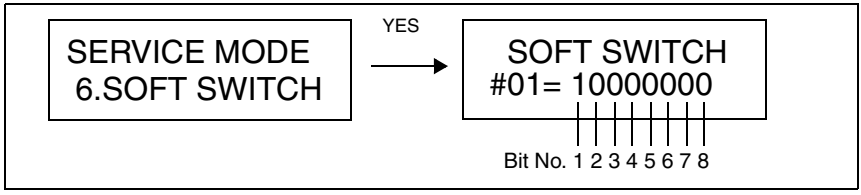
- This machine is provided with a soft switches used for making various adjustments. The initial values can be changed, defined to comply with the requirements unique to each individual country.

- The initial settings of the soft switches can be changed according to the marketing area. The settings can be changed when:
  The marketing area code is set in the Service mode.
  The marketing area code is set using the RSD utility software.
  SRAM is cleared using the Service mode. In this case, the initial settings are determined according to the current marketing area code.

- The bit status can be changed by the following methods:

1. Use Soft Switch available as a Service Mode function.

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Hex-binary conversion list		HEX															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Bit no.	4 (8)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	3 (7)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	2 (6)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
	1 (5)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

2. Use the RSD software function.

16.2 Default setting

16.2.1 Country for each Marketing area

NOTE

- **A different country may be applicable depending on the communications standard.**
- **The marketing area settings can be set using the Service's choice of Service Mode.**

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- **According to the following table, the machines that are installed in the West Europe Area select "West Europe" in the "Marketing Area" function. Do not select each country.**

Marketing area	Country
Standard	Baltic, Bahrain, Indonesia, Israel, Kuwait, Oman, Philippine, Poland, Qatar, Romania, Russia, Saudiarabia, Slovakia, Slovenia, Thailand, U.A.E., Ukraine
U.S.A	U.S.A., Canada.
West Europe	Austria, Belgium, Czech, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, West Europe.
Asia	Hong Kong, Malaysia
Setting in accordance with each country	Australia, China, Germany, Japan, Korea, New Zealand, South Africa, Taiwan.
Singapore	Singapore (remark: with DTS default setting).

16.3 Default soft switch setting for each market area 1

Soft switch No.	Marketing area																													
	Standard (Initial setting)								U.S.A.								West europe								Asia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
# 01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 02	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
# 03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1
# 04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
# 05	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0
# 06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
# 07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	0	0	0	0
# 08	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0
# 09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
# 10	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1
# 11	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
# 13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1	0	0	0
# 14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
# 15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
# 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 19	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	1	1	0	0	1	1	0
# 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
# 22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
# 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
# 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 28	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1
# 29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
# 30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
# 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
# 34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
# 35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
# 36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
# 37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soft switch No.	Marketing area																													
	Standard (Initial setting)								U.S.A.								West europe								Asia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
# 38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1
# 39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
# 47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
# 49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
# 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 59	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 60	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
# 61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
# 62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
# 64	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

16.4 Default soft switch setting for each market area 2

Soft switch No.	Marketing area																											
	Austria								China								Germany								Japan							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
# 01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
# 03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1
# 04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
# 05	0	0	0	1	0	0	1	1	1	0	0	1	0	0	1	1	1	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0
# 06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
# 07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
# 08	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	0
# 09	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0
# 10	1	1	1	1	0	1	0	1	1	1	1	1	0	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1
# 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
# 12	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
# 13	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
# 14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0
# 15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
# 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 19	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
# 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
# 22	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
# 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
# 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 28	1	1	1	0	1	0	1	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1
# 29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
# 30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
# 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 33	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
# 34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
# 35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
# 36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
# 37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soft switch No.	Marketing area																													
	Austria								China								Germany								Japan							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
# 38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1
# 39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
# 47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
# 49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
# 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 60	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
# 61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
# 62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
# 64	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0

16.5 Default soft switch setting for each market area 3

Soft switch No.	Marketing area																													
	Korea								New Zealand								South Africa								Taiwan					
	Bit No.								Bit No.								Bit No.								Bit No.					
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
# 01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
# 03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1
# 04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
# 05	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0
# 06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
# 07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0
# 08	1	1	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0
# 09	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 10	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1
# 11	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 12	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
# 13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
# 14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
# 16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
# 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 19	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0
# 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 21	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0
# 22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
# 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
# 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 28	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	0
# 29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
# 30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	1	0	0	0	1	0	1	1	0	0
# 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
# 34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0
# 36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0
# 37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soft switch No.	Marketing area																													
	Korea								New Zealand								South Africa								Taiwan							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
# 38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1
# 39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
# 47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
# 49	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
# 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
# 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 59	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 60	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
# 61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
# 62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
# 63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
# 64	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0

16.6 Default soft switch setting for each market area 4

Soft switch No.	Marketing area							
	Singapore							
	Bit No.							
	1	2	3	4	5	6	7	8
# 01	1	0	0	0	0	0	0	0
# 02	0	0	0	0	0	1	0	0
# 03	0	1	1	0	0	0	0	1
# 04	0	0	1	1	0	0	0	0
# 05	1	0	0	1	0	0	0	0
# 06	1	1	1	1	0	0	1	0
# 07	0	0	0	1	0	0	0	1
# 08	1	0	0	0	0	1	1	0
# 09	0	0	0	0	0	0	0	0
# 10	1	0	0	0	0	1	0	1
# 11	0	0	0	0	0	0	0	0
# 12	0	0	0	0	0	0	0	1
# 13	0	0	0	0	1	0	0	0
# 14	0	1	0	0	0	0	0	0
# 15	1	0	0	0	0	0	0	0
# 16	1	1	0	0	0	0	0	0
# 17	0	0	0	0	0	0	0	0
# 18	0	0	0	0	0	0	0	0
# 19	0	0	0	1	0	1	1	0
# 20	0	0	0	0	0	0	0	0
# 21	0	0	0	0	0	0	0	1
# 22	0	1	1	0	0	0	0	0
# 23	0	0	0	0	0	0	0	0
# 24	0	0	0	0	0	0	0	0
# 25	0	0	0	0	0	0	0	0
# 26	0	0	0	1	0	1	0	0
# 27	0	0	0	0	0	0	0	0
# 28	1	1	1	0	0	1	0	1
# 29	0	0	1	0	1	0	0	0
# 30	0	0	0	1	0	1	1	0
# 31	0	0	0	0	0	0	0	0
# 32	0	0	0	0	0	0	0	0

Soft switch No.	Marketing area							
	Singapore							
	Bit No.							
	1	2	3	4	5	6	7	8
# 33	0	0	0	0	0	0	1	0
# 34	0	1	0	0	0	0	0	0
# 35	0	0	0	0	0	1	0	1
# 36	0	1	0	1	0	0	0	1
# 37	0	0	0	0	0	0	0	0
# 38	1	0	0	0	0	1	1	1
# 39	1	0	0	0	0	0	0	0
# 40	0	0	0	0	0	0	0	0
# 41	0	0	0	0	0	0	0	0
# 42	0	0	0	0	0	0	0	0
# 43	0	0	0	0	0	0	0	0
# 44	0	0	0	0	0	0	0	0
# 45	0	0	0	0	0	0	0	0
# 46	0	1	0	1	0	0	0	0
# 47	0	0	0	0	0	0	0	0
# 48	1	0	0	1	0	0	0	1
# 49	1	0	0	0	0	0	0	0
# 50	0	0	0	0	0	0	0	0
# 51	0	0	0	0	0	0	0	0
# 52	0	0	0	0	0	0	0	0
# 53	0	0	0	0	0	0	0	0
# 54	0	0	0	1	0	1	0	1
# 55	0	0	0	0	0	0	0	0
# 56	0	0	0	0	0	0	0	0
# 57	0	0	0	0	0	0	0	0
# 58	0	0	0	0	0	0	0	0
# 59	0	0	0	0	0	0	0	0
# 60	1	0	0	0	0	1	0	0
# 61	1	1	1	1	0	0	0	0
# 62	0	0	0	0	0	0	0	0
# 63	0	0	0	0	0	0	0	1
# 64	0	0	0	0	1	0	0	0

16.7 Soft switch list

Switch No.	Bit No.	Designation	Page No.
# 01	8	Detect CED or not after Dial	☞ 183
	2/1	V.34 CI signal byte number reserved	
# 02	8/7	Time between phase C to phase D signal in V.17	☞ 184
	6	Header TX selection open to user	
	3/2	Transmit RTN signal level criteria	
	1	Sent N.G page	
# 03	8	Send out NSF frame with station ID	☞ 185
	7	Number of pause within phone number	
	6	Re-dial prohibit for NO ANSWER	
	4/3/2/1	RX level setting	
# 04	4	Visible alarm for RTN signal	☞ 186
	3	Audible alarm or RTN signal	
	1	Polarity change detection	
# 05	8/7	Push Button on/off Timing (PB)	☞ 187
	6/5	Relation between dialed No. and No. of dial pulse	
	4/3/2/1	Dial pulse make ratio select (MR)	
# 06	8/7	Ring on time to ignore ring off time at 1st cycle	☞ 188
	4/3	Ring off time at 1 st. cycle to approve incoming ring	
# 07	8	Dial tone or busy tone detection	☞ 188
	7	PSTN/ PBX setting	
	6	PBX dial tone detect	
	5	Dial mode select	
	4/3/2/1	Tx level select for PSK/ FSK	
# 08	8	Sending RTN signal level	☞ 189
	7	Detect busy tone after dialing	
	6	Sending CED signal after connection	
	4/3/2/1	Redial interval	
# 09	8/7	Ringer frequency detection	☞ 190
	5	TSI/ CSI Append “+”	
	2/1	Time from RX DIS signal to send DCS signal	
# 10	8	Print out RTN page report	☞ 191
	7	Confirmation report result field	
	6/5	Get gap time between digit for pulse dial	
	4	RX PIP T.30 command after send out MPS command	
	3	Received DIS signal within reception	
	2	Transmission time limitation	
	1	Audio alarm after communication fail	
# 11	7	Detect dial tone after pre-fix number	☞ 192
	6	Pulse dial allowed to select	
	1	DTMF high frequency dB value	

Switch No.	Bit No.	Designation	Page No.
# 12	8	ECM Mode capability	☞ 192
	7/6	V.34 fall back level for V.34 TX.	
	5	Send CTC after 4th PPR	
	3	Send EOR after lowest speed	
	2/1	TCF transmission timing after DCS	
# 13	8	MR capability for G3	☞ 193
	7/6	Delay time between transaction	
	5	Super fine printing capability for receiving	
	4	Disable ultra fine capability in RX mode	
	3	DTS mode (Der Telefax Standard)	
	2	Send DTC signal if RX DIS signal in polling RX mode	
# 14	6	Memory size level to RX	☞ 194
	3/2/1	Time between V.34 ANSam signal and FSK DIS signal	
# 15	1	Remote side no document to be polled	☞ 194
# 16	2/1	Fax communication coding method	☞ 195
# 17	6	CED frequency	☞ 195
	5/4/3	Pause between off hook and CED signal	
	2/1	Inactivity timer [T5]	
# 18	6/5	G3 mode training quality level	☞ 196
	4/3/2/1	Redefine re-dial attempts counter	
# 19	8/7/6/5	CNG signal level	☞ 197
	4/3/2/1	DTMF high frequency level	
# 20	5/4/3/2/1	Redefine redial interval	☞ 198
# 21	8	NSS signal before DCS	☞ 199
	7/6	CNG duration after dialing (T1)	
	5	T4 timer	
	3	DIS signal length	
	2/1	Increase default T1 timing during calling	
# 22	8	Detect busy tone before dial	☞ 200
	7	Regard dial tone as busy tone after dialing	
	6	Check busy tone method	
	4/3/2/1	CED signal output level	
# 23	-	Reserved	☞ 200
# 24	-	Reserved	☞ 201
# 25	4/3	Flash key time in ON hook key dial	☞ 201
# 26	8/7	Dial tone detection time before disconnected	☞ 202
	6/5/4/3/2/1	Dial tone insensitivity	
# 27	4/3/2/1	Immunity for dial tone receiver	☞ 203
# 28	8/7/6/5	Time to dial after dial tone on the line	☞ 204
# 29	5/4/3/2/1	Time to dial after size the line when dial tone detected	☞ 205

Switch No.	Bit No.	Designation	Page No.
# 30	8/7	Pause delay time within digit	☞ 206
	6/5/4/3/2/1	Signal tone sensitivity after dial for busy tone	
# 31	-	Reserved	☞ 207
# 32	-	Reserved	☞ 207
# 33	7	V.17 echo protection tone	☞ 208
	6	V.29 echo protection tone	
	5	Compromise equalize enable (CEQ) in the transmit path (TCEQ)	
	4	Compromise equalize enable (CEQ) in the receiver path (RCEQ)	
# 34	-	Reserved	☞ 208
# 35	8/7	Dial tone table switch time	☞ 209
	6/5/4	Dial tone frequency upper range index	
	3/2/1	Dial tone frequency low range index	
# 36	8	Re-dial attempts continue fall counter	☞ 210
	4/3/2/1	Re-dial attempts fail limitation counter	
# 37	8	Polling TX type for V.34 modem	☞ 211
	7	Auto dial learning for V.34 modem	
	6/5/4	RX start symbol rate for V.34 modem	
	3/2/1	TX start symbol rate for V.34 modem	
# 38	8	Fine tone of 33.6 kbps/ 33.2 kbps receiving speed for V.34 modem	☞ 212
	7	Set/ reset V.34 transmit level deviation	
	6/5	V.34 flag number between ECM frame	
	4	Phase 2 guard tone power level (V.34)	
	2	Polling RX start speed	
	1	V.8/ V.34 capability	
# 39	8	Disable V.34 TX for V.34 modem	☞ 212
	7	Disable V.34 RX for V.34 modem	
	6/5	Flags number in ECM frame for V.34 modem	
	4	Manual TX mode for V.34 modem	
	3	Switch from V.17 to V.34 if DIS bit 6 set after received DIS	
	2/1	Delay time in primary channel for V.34 transmit after CFR or MCF signal	
# 40	8/7/6/5	V.17 RX start speed	☞ 213
	3/2/1	V.34 RX start speed	
# 41	8/7/6/5	V.17 TX start speed	☞ 214
	3/2/1	V.34 TX start speed	
# 42	-	Reserved	☞ 215
# 43	-	Reserved	☞ 215
# 44	-	Reserved	☞ 215
# 45	6	Closed network	☞ 216

Switch No.	Bit No.	Designation	Page No.
# 46	8	Delight savings timer	☞ 216
	4	RX print	
	3	Default TX mode	
	2	Header for FAX TX	
	1	Print model name	
# 47	6	RX mode	☞ 217
	5	Footer	
# 48	8	Activity report	☞ 217
	7	Reservation report	
	6	TX result report	
	5	RX result report	
	4	TX/ RX error report	
	3	Error report for I-FAX and network scanner	
	2	Error mail (I-FAX)	
	1	Broadcast report	
# 49	6	Print RX mailbox report method	☞ 218
	5	Redial method if communication fail	
	4/3/2/1	No. of ring	
# 50	8	Transmit or cancel after time out in “Memory TX”	☞ 218
# 51	4/3	T30 monitor report selection	☞ 219
	2	Send “un-sent page mode” for memory transmission	
# 52	-	Reserved	☞ 219
# 53	-	Reserved	☞ 220
# 54	8	Report/ LCD date/ time type	☞ 220
	7/6	Report/ LCD date/ time format	
	5/4	Memory near full capacity for black/ white scanning	
	3/2	Memory near full capacity for color/gray scanning	
# 55	-	Reserved	☞ 221
# 56	-	Reserved	☞ 221
# 57	-	Reserved	☞ 221
# 58	8	Time out from OSK to FSK delay time	☞ 222
# 59	6/5/4/3/2/1	Time between GMT (Greenwich Mean Time)	☞ 223
# 60	6	Quick memory TX	☞ 226
	3	Print mailbox RX image even if password is not correct	
	2	Off hook alarm after communication	
	1	Display destination selection within TX phase C	
# 61	4/3/2/1	Max. No. of ring	☞ 226
# 62	-	Reserved	☞ 227
# 63	8	# key definition in PBX mode	☞ 227
	1	TX result report with image	

Switch No.	Bit No.	Designation	Page No.
# 64	6	Print RX error report on RX side if no FAX signal is detected	☞ 228
	5	10 pps & 20 pps selectable by user	

16.8 Soft switch definition

16.8.1 SOFT SWITCH: #01

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Detect CED or not after Dial	0: Detect CED after dial 1: Not detect CED after dial	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	1
3	Reserved	Reserved	0	
2	V.34 CI signal byte number reserved		0	
1			1	

Byte number	30 bytes	**9 bytes**	15 bytes	60 bytes
Bit 2	0	**0**	1	1
Bit 1	0	**1**	0	1

16.8.2 SOFT SWITCH: #02

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Time between phase C to phase D signal in V.17

Example:
Image --> EOP</td><td rowspan="2"><table><tr><td>RX Insensitivity</td><td>70 ms</td><td>120 ms</td><td>180 ms</td><td>60 ms</td></tr><tr><td>Bit 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="3">2</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>Header TX selection open to user</td><td>0: No
1: Yes</td><td>1</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td>0</td></tr>
<tr><td>3</td><td rowspan="2">Transmit RTN signal level criteria</td><td rowspan="2"><table><tr><td>Percentage of error line</td><td>10 %</td><td>15 %</td><td>20 %</td><td>25 %</td></tr><tr><td>Bit 3</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 2</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="3"></td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>Sent N.G page</td><td>0: Send N.G page and up to 3 times for that page
1: Not re-send that N.G page for G3 mode</td><td>0</td></tr>
</table>

- Bit 1 :If this bit is set to '0', N.G indicates our side detected RTN signal from other end. In this case machine can re-send the same page up to three or just one time, and this use for G3 mode only.
- Bit 2 to 3 :In G3 mode, if error line for each page meets the criteria setting, receiving machine will send RTN signal, in this case, some machine will re-send the same page again. The retry times depend on transmission side.
- Bit 6 :If this bit is set to '0', the header select function can not be changed by user, only changeable by serviceman in service mode.

16.8.3 SOFT SWITCH: #03

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Send out NSF frame with station ID</td><td>1: Yes
0: No</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>7</td><td>Number of pause within phone number</td><td>0: No limitation
1: Max. up to 2 “P” within inputted telephone number</td><td>0</td></tr>
<tr><td>6</td><td>Re-dial prohibit for NO ANSWER</td><td>0: Continue to dial
1: Not allowed to re-dial if no any FAX signal or detected busy tone after dialing</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">RX level setting</td><td rowspan="4">
<table>
<tr><td>RX level (dB)</td><td>-49</td><td>-48</td><td>-47</td><td>-46</td><td>-45</td><td>-44</td><td>-43</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
<table>
<tr><td>RX level (dB)</td><td>-42</td><td>-41</td><td>-40</td><td>-39</td><td>-38</td><td>-37</td><td>-36</td></tr>
<tr><td>Bit 4</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Bit 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>RX level (dB)</td><td colspan="2">Reserved</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">6</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 8 :If this bit is set to 1, the answer machine will send the machine name (which is that set in INITIAL USER DATA of Utility Mode) by NSF frame after connection.
- Bit7 :Can input Pause key to insert pause time between digits, this can put more than one “P” at the end of access telephone number during calling to other parties by using PBX system.

16.8.4 SOFT SWITCH: #04

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Visible alarm for RTN signal	0: No **1: Yes - display message while sending / receiving RTN signal (RTN= Return To Negative).**	1	C
3	Audible alarm for RTN signal	0: No **1: Yes - alarm for sending or receiving RTN signal.**	1	
2	Reserved	Reserved	0	
1	Polarity change detection	**0: Not to detect phase reverse during dialing & calling** 1: Detect line phase reverse during dialing & calling	0	

- Bit 3: The alarm lasts for 3 seconds after a negative signal is detected in G3 mode.
- Bit 4: The display message will stay put on the LCD for 3 seconds or until next incoming T30 signal.

16.8.5 SOFT SWITCH: #05

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Push button on/off timing (PB)</td><td rowspan="2"><table>
<tr><td rowspan="2">Timing (ms)</td><td>ON</td><td>100</td><td>70</td><td>70</td><td>90</td></tr>
<tr><td>OFF</td><td>140</td><td>70</td><td>140</td><td>90</td></tr>
<tr><td colspan="2">Bit 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td colspan="2">Bit 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td><td rowspan="3">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td rowspan="2">Relation between dialed No. and No. of dial pulse</td><td><table>
<tr><td># 1</td><td>1</td><td>2</td><td>9</td><td rowspan="10">Reserved</td></tr>
<tr><td># 2</td><td>2</td><td>3</td><td>8</td></tr>
<tr><td># 3</td><td>3</td><td>4</td><td>7</td></tr>
<tr><td># 4</td><td>4</td><td>5</td><td>6</td></tr>
<tr><td># 5</td><td>5</td><td>6</td><td>5</td></tr>
<tr><td># 6</td><td>6</td><td>7</td><td>4</td></tr>
<tr><td># 7</td><td>7</td><td>8</td><td>3</td></tr>
<tr><td># 8</td><td>8</td><td>9</td><td>2</td></tr>
<tr><td># 9</td><td>9</td><td>10</td><td>1</td></tr>
<tr><td># 0</td><td>10</td><td>1</td><td>10</td></tr>
<tr><td colspan="2">Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td colspan="2">Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Dial pulse make ratio select (MR)</td><td><table>
<tr><td>PPS</td><td>20</td><td>20</td><td>20</td><td rowspan="2">Reserved</td><td>16</td><td>16</td><td>16</td><td rowspan="2">Reserved</td></tr>
<tr><td>MR(%)</td><td>33</td><td>40</td><td>30</td><td>33</td><td>40</td><td>30</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>PPS</td><td>10</td><td>10</td><td>10</td><td>10</td><td colspan="4" rowspan="2">Reserved</td></tr>
<tr><td>MR(%)</td><td>33</td><td>40</td><td>30</td><td>32</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

16.8.6 SOFT SWITCH: #06

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Ring on time to ignore ring off time at 1st cycle</td><td rowspan="2"><table><tr><td>Time (ms)</td><td>50</td><td>100</td><td>150</td><td>800</td></tr><tr><td>Bit 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="4">4</td></tr>
<tr><td>7</td><td>1</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">Ring off time at 1st. cycle to approve incoming ring</td><td rowspan="2"><table><tr><td>Time (ms)</td><td>100</td><td>250</td><td>500</td><td>1000</td></tr><tr><td>Bit 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td><td rowspan="4">F</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td>Reserved</td><td>Reserved</td><td>1</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>1</td></tr>
</table>

16.8.7 SOFT SWITCH: #07

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Dial tone or busy tone detection</td><td>0: Disable
1: Enable - Detect dial tone before dial</td><td>0</td><td>0</td></tr>
<tr><td>7</td><td>PSTN/PBX setting</td><td>0: PSTN
1: PBX - Select PBX line type</td><td>0</td><td rowspan="4"></td></tr>
<tr><td>6</td><td>PBX dial tone detect</td><td>0: Not to detect dial tone before pre-fix number
1: Detect dial tone before the pre-fix number in PBX mode</td><td>0</td></tr>
<tr><td>5</td><td>Dial mode select</td><td>0: DTMF - PB
1: Pulse - DP</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Tx level select for PSK/FSK</td><td rowspan="4"><table><tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr><tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table><table><tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr><tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

16.8.8 SOFT SWITCH: #08

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Sending RTN signal level</td><td>0: (Normal, Fine)=(12,24) continue error line
1: (Normal, Fine)=(6,12) continue error line</td><td>0</td><td>6</td></tr>
<tr><td>7</td><td>Detect busy tone after dialing</td><td>0: Not to detect
1: Detect busy tone after dialing</td><td>1</td><td></td></tr>
<tr><td>6</td><td>Sending CED signal After connection</td><td>0: Not to send
1: Send CED signal before DIS signal after connection</td><td>1</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>4</td><td rowspan="4">Redial Interval</td><td rowspan="4">
<table>
<tr><td>Auto dial interval</td><td>1, 1, 1, 1, 1, 10, 1, 1, 1.</td><td>3, 3, 15, 3, 3.</td><td>1, 1, 15.</td><td>3, 3.</td><td>1, 1, 1.</td><td>3, 3, 3.</td><td>1, 1.</td><td>3, 3, 3, 3.</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Auto dial interval</td><td>1, 1, 1, 1.</td><td>2, 2.</td><td>5, 5, 5, 5.</td><td>1, 2, 2, 2.</td><td>2, 2, 2, 2, 2, 2, 2, 2.</td><td>2, 2, 10, 2, 2, 2.</td><td>3, 3, 10, 3, 3, 3, 3.</td><td>10, 10, 10, 10, 10, 15, 10.</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">1</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

- Bit 8: If error line above definition, machine will send RTN signal instead of MCF signal. This will cause the other party to send the same page again.

16.8.9 SOFT SWITCH: #09

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="3">Ringer frequency detection</td><td rowspan="3"><table><tr><td>Ringer frequency range (Hz)</td><td>10 to 75 Hz</td><td>20 to 57.5</td><td>20 to 75 Hz</td><td>10 to 75 Hz</td></tr><tr><td>Bit 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td>TSI/CSI append “+”</td><td>0: Not append “+” before send out TSI/CSI
1: Automatically insert “+”</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Time from RX DIS signal to send DCS signal</td><td rowspan="2"><table><tr><td>Description (ms)</td><td>70</td><td>120</td><td>180</td><td>240</td></tr><tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 5: When this bit is set to “1”, the “+” character will be placed in the first position on CSI and TSI command.

16.8.10 SOFT SWITCH: #10

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Print out RTN page report</td><td>0: Not to Print
1: Print Out RTN page report after transaction for TX/ RX RTN signal</td><td>1</td><td rowspan="6">A</td></tr>
<tr><td>7</td><td>Confirmation report result field</td><td>0: Print “OK”
1: Print “NG” in case of sending or receiving RTN signal</td><td>0</td></tr>
<tr><td>6</td><td rowspan="2">Get gap time between digit for pulse dial</td><td rowspan="2"><table><tr><td>Value (ms)</td><td>550</td><td>650</td><td>750</td><td>850</td></tr><tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>RX PIP T.30 command after send out MPS command</td><td>0: Send DCS at current speed
1: Return to Tx phase B waiting for DIS signal</td><td>0</td><td>1</td></tr>
<tr><td>3</td><td>Received DIS signal within reception</td><td>0: Repeat sending DIS/DTC again until time out
1: Disconnected after sending DCN signal</td><td>0</td><td rowspan="3"></td></tr>
<tr><td>2</td><td>Transmission time limitation</td><td>0: No any limitation until document jam
1: Limit to 8 minutes from data phase</td><td>0</td></tr>
<tr><td>1</td><td>Audio alarm after communication fail</td><td>0: Not to alarm after transaction fail
1: Alarm 3 seconds after disconnected</td><td>1</td></tr>
</table>

- Bit 8: If this bit set to 1, machine will print out confirmation report after each transaction for TX/RX RTN signal.
- Bit 7: If this bit is set to1, the result field will show “NG” instead of “OK” in the confirmation report and activity report or checking the result on the LCD.
- Bit 2: For Manual Tx only.

16.8.11 SOFT SWITCH: #11

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Detect dial tone after pre-fix number	**0: No** 1: Yes	0	
6	Pulse dial allowed to select	**0: Yes** 1: Not allowed	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	DTMF high frequency dB value	**0: Base on SW19 (1 to 4)** 1: High 1dB	0	

- Bit 6: If this bit is set to 1, not allowed user to select Pulse dial, and this function open for serviceman to change.
- Bit 7: Bit set to 1, LCD will show the command between each party.

16.8.12 SOFT SWITCH: #12

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	ECM mode capability	**1: Yes** 0: No - also disable V.34 modem capability	1	8
7	V.34 fall back level for V.34 TX.		0	
6			0	
5	Send CTC after 4th PPR	**0: Send CTC (Continue To Correct)** 1: Send EOR (End Of Transmission)	0	
4	Reserved	Reserved	0	0
3	Send EOR after lowest speed	**0: Send DCN (Redial)** 1: Send EOR_xxx (Germany PTT)	0	
2	TCF transmission timing after DCS		0	
1			0	

Counter	**1**	2	3	4
Bit 7	**0**	0	1	1
Bit 6	**0**	1	0	1

Description (ms)	**70**	80	90	100
Bit 2	**0**	0	1	1
Bit 1	**0**	1	0	1

- Bit 1 to 2: Delay time from FSK mode to PSK mode, this is used for G3 mode only, V.34 does not need this setting.
- Bit 6 to 7: If level reads “1”, machine. Will go down to next lower speed for next data phase.

16.8.13 SOFT SWITCH: #13

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>MR capability for G3</td><td>0: Yes
1: No</td><td>0</td><td rowspan="3">1</td></tr>
<tr><td>7</td><td rowspan="2">Delay time between transaction</td><td rowspan="2"><table><tr><td>Description (sec)</td><td>20</td><td>60</td><td>120</td><td>240</td></tr><tr><td>Bit 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>Super fine printing capability for receiving</td><td>0: No.
1: Yes</td><td>1</td><td></td></tr>
<tr><td>4</td><td>Disable ultra fine capability in RX mode</td><td>0: No.
1: Yes</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>DTS mode
(Der Telefax Standard)</td><td>0: No
1: Yes</td><td>0</td></tr>
<tr><td>2</td><td>Send DTC signal if RX DIS signal in polling RX mode</td><td>1: No -send DIS again
0: Yes</td><td>0</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
</table>

- Bit 7 to 6:If set to 1, the time between each transaction will become longer, in this case machine will wait more time before start to dial next transaction.
- Bit 4 :The resolution definition:
  - Standard R8 x 3.85 lines/mm
  - Fine R8 x 7.7 lines/mm
  - Super fine R8 x 15.4 line/mm,
  - Ultra fine R8 x 15.4 lines/mm.

16.8.14 SOFT SWITCH: #14

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td>Memory size level To RX</td><td>1: Up to 128 KB
0: Based on system configuration</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">2</td></tr>
<tr><td>3</td><td rowspan="3">Time between V.34 ANSam signal and FSK DIS signal</td><td rowspan="3"><table><tr><td>Timer (ms)</td><td>50</td><td>60</td><td>70</td><td>80</td><td>100</td><td>120</td><td>140</td><td>160</td></tr><tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 6: If set to 1, machine will become manual RX mode if available memory size less than 128 K (manual RX mode: Press “Speaker” key and “Start” key, then machine can start receiving).

16.8.15 SOFT SWITCH: #15

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">1</td></tr>
<tr><td>3</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>2</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>1</td><td>Remote side no document to be polled</td><td>0: Not to generate error report document to be polled
1: Generate error report after communication end</td><td>1</td></tr>
</table>

16.8.16 SOFT SWITCH: #16

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td>0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td>3</td></tr>
<tr><td>3</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>2</td><td rowspan="2">Fax communication coding method</td><td rowspan="2"><table><tr><th>Coding method</th><th>MMR</th><th>MR</th><th>MH</th><th>JBIG</th></tr><tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td><td></td></tr>
<tr><td>1</td><td>1</td><td></td></tr>
</table>

16.8.17 SOFT SWITCH: #17

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td>0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>6</td><td>CED frequency</td><td>0: 2100 Hz
1: 1100 Hz</td><td>0</td><td></td></tr>
<tr><td>5</td><td rowspan="3">Pause between off hook and CED signal</td><td rowspan="3"><table><tr><th>Time (T=)</th><th>1.8 sec to 2.5 sec</th><th>T+ 100 ms</th><th>T+ 200 ms</th><th>T+ 300 ms</th></tr><tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table><table><tr><th>Time (T=)</th><th>T+ 400 ms</th><th>T+ 500 ms</th><th>T+ 600 ms</th><th>T+ 700 ms</th></tr><tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td></td></tr>
<tr><td>4</td><td>0</td><td>0</td></tr>
<tr><td>3</td><td>0</td><td></td></tr>
<tr><td>2</td><td rowspan="2">Inactivity timer [T5]</td><td rowspan="2"><table><tr><th>Description</th><th>T5</th><th>T5 + 20 sec</th><th>T5 + 40 sec</th><th>T5 + 60 sec</th></tr><tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td></td></tr>
<tr><td>1</td><td>0</td><td></td></tr>
</table>

- T5: 60 ± 5 sec in ITU-T standard

16.8.18 SOFT SWITCH: #18

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="3">0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td rowspan="2">G3 mode training quality level</td><td rowspan="2"><table><tr><td>Definition</td><td>Level1</td><td>Level2</td><td>Level3</td><td>Level4</td></tr><tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Redefine re-dial attempts counter</td><td rowspan="4"><table><tr><td>Counter</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr></table><table><tr><td>Counter</td><td colspan="5">Reserved</td></tr><tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1 to 4:The redial attempt times will follow bit 1to 4, if these bits are not all setting “0.” Otherwise the redial attempt times will follow bit 1 to 4 on SW08.
- Bit 5 to 6:Level 4 training check phases is most severe than level 3, 2, 1. Level 4 can keep lowest RX speed communication than level 3, 2, 1 when poor line condition.

16.8.19 SOFT SWITCH: #19

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8
7
6
5</td><td>CNG signal level</td><td>
<table>
<tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr>
<tr><td>Bit 8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr>
<tr><td>Bit 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0
1
1
0</td><td>6</td></tr>
<tr><td>4
3
2
1</td><td>DTMF high frequency level</td><td>
<table>
<tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1
0
0
0</td><td>8</td></tr>
</table>

16.8.20 SOFT SWITCH: #20

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td rowspan="5">Redefine redial interval

Redefine redial interval over default setting that is based on soft SW #08 bit 1 to 4</td><td rowspan="5">
<table>
<tr><td>Interval (min)</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Interval (min)</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
<table>
<tr><td>Interval (min)</td><td colspan="11">Reserved</td></tr>
<tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="5">0</td></tr>
<tr><td>4</td><td>0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

16.8.21 SOFT SWITCH: #21

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>NSS signal before DCS</td><td>0: Not to send NSS signal if remote side is same model
1: Send NSS signal if remote side is same model</td><td>1</td><td rowspan="3">C</td></tr>
<tr><td>7</td><td rowspan="2">CNG duration after dialing(T1)</td><td rowspan="2"><table><tr><td>Duration (sec)</td><td>40</td><td>60</td><td>70</td><td>120</td></tr><tr><td>Bit 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>T4 timer</td><td>0: 3.0 sec – Normal case
1: 4.5 sec</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>DIS signal length</td><td>0: Normal length (bit 1 to 64)
1: 4 bytes DIS command – bit 1 to 32 only</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Increase default T1 timing during calling</td><td rowspan="2"><table><tr><td>Description (sec)</td><td>T1</td><td>T1+ 30</td><td>T1+ 40</td><td>T1+60</td></tr><tr><td>Bit 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1 to 2:T1 indicates the calling time after dialing, can adjust the T1 time longer by changing the default value. The default T1 timer depends on each country regulation.
- Bit 3 :Some old machines can not accept DIS command over 4 bytes, and every time will become fail. In this case you can set this bit to 1. If this bit is set to 1, JBIG and V8 capability will be disabled automatically.
- Bit 6 to 7:A fax to be received is cancelled and the machine becomes unable to receive it if the setting of “No. of RINGS” is made longer than the setting of “CNG duration after dialing.” Be sure to make the “No. of RINGS” setting to a value shorter than the “CNG duration after dialing” setting.
  ☞ Utility Mode/ RX operation/ No. of RINGS
- Bit 8 :Sender machine’s name will show on the other party’s LCD or print on the report if remote side is the same model.

16.8.22 SOFT SWITCH: #22

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Detect busy tone before dial</td><td>1: Check busy tone within dial tone detection
0: Not to check</td><td>0</td><td>0</td></tr>
<tr><td>7</td><td>Regard dial tone as busy tone after dialing</td><td>1: Yes - Check dial tone after dialing
0: No</td><td>0</td><td></td></tr>
<tr><td>6</td><td>Check busy tone method</td><td>0: Measure tone by input energy over threshold
1: By PTT regulation tone frequency</td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>4</td><td rowspan="4">CED signal output level</td><td rowspan="4"><table>
<tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td><td>6</td></tr>
<tr><td>3</td><td>1</td><td></td></tr>
<tr><td>2</td><td>1</td><td></td></tr>
<tr><td>1</td><td>0</td><td></td></tr>
</table>

16.8.23 SOFT SWITCH: #23

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.24 SOFT SWITCH: #24

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.25 SOFT SWITCH: #25

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Flash key time in ON hook key dial		0	0
3			0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

Flash time (ms)	**100**	80	60	50
Bit 4	**0**	0	1	1
Bit 3	**0**	1	0	1

16.8.26 SOFT SWITCH: #26

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Dial tone detection time before disconnected		0	2
7			0	
6	Dial tone insensitivity (0 dBm to -40 dBm)		1	
5			0	
4			1	8
3			0	
2			0	
1			0	

Time (sec)	**10**	15	20	25
Bit 8	**0**	0	1	1
Bit 7	**0**	1	0	1

Level (dBm)	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Bit 6	0	0	0	0	0	0	0	0	0	0	0
Bit 5	0	0	0	0	0	0	0	0	0	0	0
Bit 4	0	0	0	0	0	0	0	0	1	1	1
Bit 3	0	0	0	0	1	1	1	1	0	0	0
Bit 2	0	0	1	1	0	0	1	1	0	0	1
Bit 1	0	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
Bit 6	0	0	0	0	0	0	0	0	0	0
Bit 5	0	0	0	0	0	1	1	1	1	1
Bit 4	1	1	1	1	1	0	0	0	0	0
Bit 3	0	1	1	1	1	0	0	0	0	1
Bit 2	1	0	0	1	1	0	0	1	1	0
Bit 1	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
Bit 6	0	0	0	0	0	0	0	0	0	0
Bit 5	1	1	1	1	1	1	1	1	1	1
Bit 4	0	0	0	1	1	1	1	1	1	1
Bit 3	1	1	1	0	0	0	0	1	1	1
Bit 2	0	1	1	0	0	1	1	0	0	1
Bit 1	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-31	-32	-33	-34	-35	-36	-37	-38	-39	**-40**
Bit 6	0	1	1	1	1	1	1	1	1	**1**
Bit 5	1	0	0	0	0	0	0	0	0	**0**
Bit 4	1	0	0	0	0	0	0	0	0	**1**
Bit 3	1	0	0	0	0	1	1	1	1	**0**
Bit 2	1	0	0	1	1	0	0	1	1	**0**
Bit 1	1	0	1	0	1	0	1	0	1	**0**

Level (dBm)	-41 to -50
Bit 1 to 6	Setting disable

16.8.27 SOFT SWITCH: #27

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Immunity for dial tone receiver</td><td rowspan="4">
<table>
<tr><td>Level (dBm)</td><td>0</td><td>-1</td><td>-2</td><td>-3</td><td>-4</td><td>-5</td><td>-6</td><td>-7</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-8</td><td>-9</td><td>-10</td><td>-11</td><td>-12</td><td>-13</td><td>-14</td><td>-15</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1 to 4:Line input energy must be lower this level before dialing.

16.8.28 SOFT SWITCH: #28

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">Time to dial after dial tone on the line</td><td rowspan="4">
<table>
<tr><td>Time (sec)</td><td>0</td><td>0.1</td><td>0.2</td><td>0.3</td><td>0.4</td><td>0.5</td><td>0.6</td><td>0.7</td></tr>
<tr><td>Bit 8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (sec)</td><td>0.8</td><td>0.9</td><td>1</td><td>1.1</td><td>1.2</td><td>1.3</td></tr>
<tr><td>Bit 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (sec)</td><td>1.4</td><td>1.5</td></tr>
<tr><td>Bit 8</td><td>1</td><td>1</td></tr>
<tr><td>Bit 7</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">7</td></tr>
<tr><td>3</td><td>Reserved</td><td>Reserved</td><td>1</td></tr>
<tr><td>2</td><td>Reserved</td><td>Reserved</td><td>1</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>1</td></tr>
</table>

16.8.29 SOFT SWITCH: #29

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="3">1</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td rowspan="5">Time to dial after size the line when dial tone detected
(Unit = 200 ms)</td><td rowspan="5">
<table>
<tr><td>Time (sec)</td><td>0</td><td>0.2</td><td>0.4</td><td>0.6</td><td>0.8</td><td>1.0</td><td>1.2</td><td>1.4</td><td>1.6</td><td>1.8</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (sec)</td><td>2.0</td><td>2.2</td><td>2.4</td><td>2.6</td><td>2.8</td><td>3.0</td><td>3.2</td><td>3.4</td><td>3.6</td><td>3.8</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (sec)</td><td>4.0</td><td>4.2</td><td>4.4</td><td>4.6</td><td>4.8</td><td>5.0</td><td>5.2</td><td>5.4</td><td>5.6</td><td>5.8</td></tr>
<tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (sec)</td><td>6.0</td><td>6.2</td></tr>
<tr><td>Bit 5</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="5">4</td></tr>
<tr><td>4</td><td>0</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

16.8.30 SOFT SWITCH: #30

<table>
<tr><th>Bit No.</th><th>Designation</th><th>Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th></th><th></th><th></th><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Pause delay time within digits
Ex. 002Pxxxxxx</td><td rowspan="2"><table><tr><td>Time (sec)</td><td>2.0</td><td>2.5</td><td>3.0</td><td>3.5</td></tr><tr><td>Bit 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="2">6</td></tr>
<tr><td>7</td><td>1</td></tr>
<tr><td>6</td><td rowspan="6">Signal tone sensitivity (dBm) after dial for busy tone</td><td rowspan="6"><table><tr><td>Level (dBm)</td><td>0</td><td>-1</td><td>-2</td><td>-3</td><td>-4</td><td>-5</td><td>-6</td><td>-7</td><td>-8</td><td>-9</td><td>-10</td></tr><tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr></table><table><tr><td>Level (dBm)</td><td>-11</td><td>-12</td><td>-13</td><td>-14</td><td>-15</td><td>-16</td><td>-17</td><td>-18</td><td>-19</td><td>-20</td></tr><tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 3</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr><tr><td>Bit 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr></table><table><tr><td>Level (dBm)</td><td>-21</td><td>-22</td><td>-23</td><td>-24</td><td>-25</td><td>-26</td><td>-27</td><td>-28</td><td>-29</td><td>-30</td></tr><tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 2</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr></table><table><tr><td>Level (dBm)</td><td>-31</td><td>-32</td><td>-33</td><td>-34</td><td>-35</td><td>-36</td><td>-37</td><td>-38</td><td>-39</td><td>-40</td></tr><tr><td>Bit 6</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit 5</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit 4</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit 3</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td></tr><tr><td>Bit 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr><tr><td>Bit 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr></table><table><tr><td>Level (dBm)</td><td>-41 to -50</td></tr><tr><td>Bit 1 to 6</td><td>Setting disable</td></tr></table></td><td>1</td><td rowspan="6">8</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>1</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

16.8.31 SOFT SWITCH: #31

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.32 SOFT SWITCH: #32

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.33 SOFT SWITCH: #33

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	4
7	V.17 echo protection tone	0: Off **1: On**	1	
6	V.29 echo protection tone	**0: Off** 1: On	0	
5	Compromise equalize enable (CEQ) in the transmit path (TCEQ)	**0: No** 1: Yes	0	
4	Compromise equalize enable (CEQ) in the receiver path (RCEQ)	**0: No** 1: Yes	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

- Bit 4 to 5: V.17, V.29 and V.27 only

16.8.34 SOFT SWITCH: #34

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	2
3	Reserved	Reserved	0	
2	Reserved	Reserved	1	
1	Reserved	Reserved	0	

16.8.35 SOFT SWITCH: #35

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="3">Dial tone table switch time</td><td rowspan="3"><table>
<tr><td>Time (ms)</td><td>300</td><td>600</td><td>1000</td><td>2000</td></tr>
<tr><td>Bit 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>1</td><td rowspan="3">9</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td rowspan="3">Dial tone frequency upper range index</td><td>0</td></tr>
<tr><td>5</td><td>1</td></tr>
<tr><td>4</td><td rowspan="2">0</td><td rowspan="2">0</td></tr>
<tr><td>3</td><td rowspan="3">Dial tone frequency Low range index</td><td rowspan="2">0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

<table>
<tr><td>Frequency range (Hz)</td><td>375 to 462</td><td>310 to 380</td><td>462 to 580</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit 4</td><td>0</td><td>1</td><td>0</td></tr>
</table>

<table>
<tr><td>Frequency range (Hz)</td><td>570 to 630</td><td>300 to 370</td><td colspan="3">Reserved</td></tr>
<tr><td>Bit 6</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>

See Bit 1 to 3
(This upper range value must be higher than lower range value that defined in bit 1 to 3)

<table>
<tr><td>Frequency range (Hz)</td><td>375 to 462</td><td>310 to 380</td><td>462 to 580</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td></tr>
</table>

<table>
<tr><td>Frequency range (Hz)</td><td>570 to 630</td><td>300to 370</td><td colspan="3">Reserved</td></tr>
<tr><td>Bit 3</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>

16.8.36 SOFT SWITCH: #36

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Re-dial attempts continue fail counter</td><td>0: No any limitation
1: limit up to bit 1 to 4</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Re-dial attempts fail limitation counter</td><td rowspan="4">
<table>
<tr><td>Counter</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Counter</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">6</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 8: The redial fail counter will plus 1 for each auto dialing, unless user interruption or after finish communication. If the counter is over the setting in bit 1to 4 and Bit set to 1, then the machine will stop redial unless user interruption or enter the communication phase.

16.8.37 SOFT SWITCH: #37

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Polling TX type for V.34 modem</td><td>0: V.34
1: V.17</td><td>0</td><td>0</td></tr>
<tr><td>7</td><td>Auto dial learning for V.34 modem</td><td>0: Yes- skip V.34 handshaking with remote side
1: No - retry from V.8 handshake</td><td>0</td><td></td></tr>
<tr><td>6</td><td rowspan="3">RX start symbol rate for V.34 modem</td><td rowspan="3">
<table>
<tr><td>Symbol rate (sym/s)</td><td>3429</td><td>3200</td><td>3000</td><td>2800</td><td>2400</td></tr>
<tr><td>Max. speed (kbps)</td><td>33.6</td><td>31.2</td><td>26.4</td><td>24.0</td><td>21.6</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Bit 4</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
<table>
<tr><td>Symbol rate
Max. speed</td><td colspan="3">Reserved</td></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td></td></tr>
<tr><td>5</td><td>0</td><td></td></tr>
<tr><td>4</td><td>0</td><td>0</td></tr>
<tr><td>3</td><td rowspan="3">TX start symbol rate for V.34 modem</td><td rowspan="3">
<table>
<tr><td>Symbol rate (sym/s)</td><td>3429</td><td>3200</td><td>3000</td><td>2800</td><td>2400</td></tr>
<tr><td>Max. speed (kbps)</td><td>33.6</td><td>31.2</td><td>26.4</td><td>24.0</td><td>21.6</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Bit 4</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
<table>
<tr><td>Symbol rate
Max. speed</td><td colspan="3">Reserved</td></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td></td></tr>
<tr><td>2</td><td>0</td><td></td></tr>
<tr><td>1</td><td>0</td><td></td></tr>
</table>

16.8.38 SOFT SWITCH: #38

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Fine tune of 33.6 kbps/ 31.2 kbps receiving speed for V.34 modem	0: No - modem default setting **1: Yes**	1	E
7	Set/Reset V.34 transmit level deviation	0: Reset **1: Set**	1	
6	V.34 flag number between ECM frame		1	
5			0	
4	Phase 2 guard tone power level (V.34)	**0: normal power level** 1: -7 db of normal power level	0	1
3	Reserved	Reserved	0	
2	Polling RX start speed	**0: start from V.34** 1: start from V.17	0	
1	V.8 /V.34 capability	0: No **1: Yes**	1	

Flags number	2	4	**8**	10
Bit 6	0	0	**1**	1
Bit 5	0	1	**0**	1

- Bit 8: This bit when set to 1 can get higher speed communication for V.34 under the same line condition.

16.8.39 SOFT SWITCH: #39

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Disable V.34 TX for V.34 modem	**0: No** 1: Yes	0	0
7	Disable V.34 RX for V.34 modem	**0: No** 1: Yes	0	
6	Flags number in ECM frame for V.34 modem		0	
5			0	
4	Manual TX mode for V.34 modem	**0: V.8 - start handshake from V.8** 1: V.17	0	1
3	Switch from V.17 to V.34 if DIS bit 6 set after received DIS	**0: Yes - start V.8 handshaking.but only first time** 1: No - Continue start with V.17	0	
2	Delay time in primary channel for V.34 transmit after CFR or MCF signal		0	
1			1	

Flags number	**1**	2	3	4
Bit 6	**0**	0	1	1
Bit 5	**0**	1	0	1

Symbol rate (ms)	100	**200**	300	500
Bit 2	0	**0**	1	1
Bit 1	0	**1**	0	1

16.8.40 SOFT SWITCH: #40

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8
7
6
5</td><td>V.17 RX start speed

Select receiving start speed for V.17</td><td>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.17</td><td>V.17</td><td>V.17</td><td>V.17</td></tr>
<tr><td>14400</td><td>12200</td><td>9600</td><td>7200</td></tr>
<tr><td>Bit 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 7</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.29</td><td>V.29</td><td>V.27</td><td>V.27 ter</td></tr>
<tr><td>9600</td><td>7200</td><td>4800</td><td>2400</td></tr>
<tr><td>Bit 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 7</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Speed</td><td colspan="8">Reserved</td></tr>
<tr><td>Bit 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0
0
0
0</td><td rowspan="2">0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>3
2
1</td><td>V.34 RX start speed</td><td>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>33600</td><td>31200</td><td>28800</td><td>26400</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>24000</td><td>21600</td><td>19200</td><td>16800</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0
0
0</td><td>0</td></tr>
</table>

16.8.41 SOFT SWITCH: #41

<table>
<tr><th>Bit No.</th><th>Designation</th><th>Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th></th><th></th><th></th><th>Bit</th><th>HEX</th></tr>
<tr><td>8
7
6
5</td><td>V.17 TX start speed

Select receiving start speed for V.17</td><td>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.17</td><td>V.17</td><td>V.17</td><td>V.17</td></tr>
<tr><td>14400</td><td>12200</td><td>9600</td><td>7200</td></tr>
<tr><td>Bit 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 7</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.29</td><td>V.29</td><td>V.27</td><td>V.27 ter</td></tr>
<tr><td>9600</td><td>7200</td><td>4800</td><td>2400</td></tr>
<tr><td>Bit 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 7</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Speed</td><td colspan="8">Reserved</td></tr>
<tr><td>Bit 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0
0
0
0</td><td rowspan="2">0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>3
2
1</td><td>V.34 TX start speed</td><td>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>33600</td><td>31200</td><td>28800</td><td>26400</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>24000</td><td>21600</td><td>19200</td><td>16800</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0
0
0</td><td></td></tr>
</table>

16.8.42 SOFT SWITCH: #42

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.43 SOFT SWITCH: #43

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.44 SOFT SWITCH: #44

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.45 SOFT SWITCH: #45

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Closed network	**0: OFF** 1: ON	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.46 SOFT SWITCH: #46

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Daylight savings timer	**0: No** 1: Yes	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	RX print	0: RX one page then print one page. (PRINT RX) **1: Start to print after receiving all pages. (MEMORY RX)**	1	A
3	Default TX mode	**0: Memory TX** 1: ADF TX	0	
2	Header for FAX TX	0: Off **1: On-Transmit header at top of each page.**	1	
1	Print model name on top of TX page if machine name not register	**0: No** 1: Yes	0	

- Bit 1: If machine name not registered, the model name will print at the top of each receiving page. The default is not printed.
- Bit 2: Some country such as U.S.A. PTT regulation, must send header at top of each page.

16.8.47 SOFT SWITCH: #47

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	RX mode	**0: Auto RX mode** 1: Manual RX mode	0	
5	Footer	**0: Off** 1: On – Print footer information at each of received page	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

- Bit 5: The footer shows machine number, receiving time, remote side TSI number, session and page number.

16.8.48 SOFT SWITCH: #48

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Activity report	0: No **1: Yes**	1	8
7	Reservation report	**0: No** 1: Yes	0	
6	TX result report	**0: No** 1: Yes	0	
5	RX result report	**0: No** 1: Yes	0	
4	TX/ RX error report	0: No **1: Yes**	1	9
3	Error report for I-FAX and network scanner	**0: No** 1: Yes	0	
2	Error mail (I-FAX)	If machine receives Error Mail (I-FAX), the mail is deleted or kept? **0: Delete** 1: Keep	0	
1	Broadcast report	0: Not to print **1: Print**	1	

- Bit 4: During communication have error in TX or RX and Bit 4 was set, the machine printed error report.
- Bit 2: If resetting (delete), the mail will be deleted on POP3 server. If setting (keep), the mail will be kept on POP3 server.

16.8.49 SOFT SWITCH: #49

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td>0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>6</td><td>Print RX mailbox report method</td><td>0: Based on RX RESULT REPORT setting
1: Always printing</td><td>0</td><td></td></tr>
<tr><td>5</td><td>Redial method if communication fail</td><td>0: Redial again
1: Based on redial time interval</td><td>0</td><td></td></tr>
<tr><td>4</td><td rowspan="4">No. of rings</td><td rowspan="4">
<table>
<tr><td>No. of rings</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>No. of rings</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td>1</td></tr>
<tr><td>3</td><td>0</td><td></td></tr>
<tr><td>2</td><td>0</td><td></td></tr>
<tr><td>1</td><td>1</td><td></td></tr>
</table>

16.8.50 SOFT SWITCH: #50

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Transmit or cancel after time out in “Memory TX”</td><td>0: Cancel and print out
1: Transmission</td><td>0</td><td>0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td>0</td></tr>
<tr><td>3</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
</table>

- Bit 8: Can select cancel this job and print out report or start to send in case of time when memory full condition occurs

16.8.51 SOFT SWITCH: #51

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">T30 monitor report selection</td><td rowspan="2"><table><tr><th>Description</th><th>Not to print</th><th>Print report for each transaction</th><th>Print report while reporting error</th><th>Not used</th></tr><tr><td>Bit 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="3">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>Send “un-sent page mode” for memory transmission</td><td>0: From error page
1: From start page</td><td>0</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
</table>

16.8.52 SOFT SWITCH: #52

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.53 SOFT SWITCH: #53

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.54 SOFT SWITCH: #54

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Report/ LCD date/time type	0: Digits format (example: 2003. 11. 19) **1: Alpha numeric format (example: 2003. NOV. 19)**	0	2
7	Report/ LCD date/time format	When bit No.8 is “1”.	0	
6		Date/ Time: 2003. NOV. 19 (Bit 7: 0, Bit 6: 0) / 19. NOV. 2003 (Bit 7: 0, Bit 6: 1) / **NOV. 19. 2003** (Bit 7: **1**, Bit 6: **0**) When bit No.8 is “0”. Date/ Time: 2003. 11. 19 (Bit 7: 0, Bit 6: 0) / 19. 11. 2003 (Bit 7: 0, Bit 6: 1) / **11. 19. 2003** (Bit 7: **1**, Bit 6: **0**)	1	
5	Memory near full capacity for black/white scanning	Description (KB): 48 / **96** / 176 / 256 Bit 5: 0 / **0** / 1 / 1 Bit 4: 0 / **1** / 0 / 1	0	
4			1	8
3	Memory near full capacity for Color/Gray scanning	Description (KB): 512 / **1024** / 2512 / 5024 Bit 3: 0 / **0** / 1 / 1 Bit 2: 0 / **1** / 0 / 1	0	
2			0	
1	Reserved	Reserved	0	

16.8.55 SOFT SWITCH: #55

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.56 SOFT SWITCH: #56

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.57 SOFT SWITCH: #57

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.58 SOFT SWITCH: #58

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Time out from PSK to FSK delay time	0: 6 sec 1: 30 sec	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

- Bit 8: This is the delay time for PSK signal after sending MCF or PPR command. The timer depends on regulations of each country.

16.8.59 SOFT SWITCH: #59 Part 1

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td>0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td><td></td></tr>
<tr><td>6</td><td rowspan="6">Time between GMT

GMT: Greenwich mean time</td><td rowspan="6">
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+00:00</th><th>+00:30</th><th>+01:00</th><th>+01:30</th></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+02:00</th><th>+02:30</th><th>+03:00</th><th>+03:30</th></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+04:00</th><th>+04:30</th><th>+05:00</th><th>+05:30</th></tr>
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<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+06:00</th><th>+06:30</th><th>+07:00</th><th>+07:30</th></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+08:00</th><th>+08:30</th><th>+09:00</th><th>+09:30</th></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="6">0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

16.8.60 SOFT SWITCH: #59 Part 2

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="3">0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td rowspan="6">Time between GMT

GMT: Greenwich mean time</td><td rowspan="6">
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+10:00</th><th>+10:30</th><th>+11:00</th><th>+11:30</th></tr>
<tr><td>Bit 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+12:00</th><th>-00:30</th><th>-01:00</th><th>-01:30</th></tr>
<tr><td>Bit 6</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>-02:00</th><th>-02:30</th><th>-03:00</th><th>-03:30</th></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>-04:00</th><th>-04:30</th><th>-05:00</th><th>-05:30</th></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="6">0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

16.8.61 SOFT SWITCH: #59 Part 3

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="2">0</td></tr>
<tr><td>7</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>6</td><td rowspan="6">Time between GMT

GMT: Greenwich mean time</td><td rowspan="6">
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>-06:00</th><th>-06:30</th><th>-07:00</th><th>-07:30</th></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>-08:00</th><th>-08:30</th><th>-09:00</th><th>-09:30</th></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>-10:00</th><th>-10:30</th><th>-11:00</th><th>-11:30</th></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th>Time between mean time</th><th colspan="8">Greenwich mean time + T</th></tr>
<tr><th>-12:00</th><th colspan="8">Reserved</th></tr>
<tr><td>Bit 6</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 5</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="6">0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

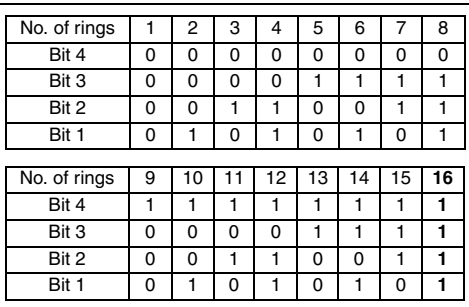
- Bit1-6: This value must be entered correctly, or E-mail headers will be wrong. A good reference web site may be found at http://greenwichmeantime.com
  Available ranges are:12 to –12, in one hour increments. The default setting is zero.

16.8.62 SOFT SWITCH: #60

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	2
7	Reserved	Reserved	0	
6	Quick memory TX	0: Ineffective **1: Effective**	1	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	1
3	Print mailbox RX image even if password is not correct	**0: No** 1: Yes	0	
2	Off hook alarm after communication	**0: Alarm** 1: No alarm after communication	0	
1	Display destination selection within TX Phase C	0: Local Name or telephone number **1: Display and report Remote telephone number**	1	

- Bit 3: If bit 3 is set to “1”, machine will print out the incoming page even if password is not correct.

16.8.63 SOFT SWITCH: #61

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Max. No. of rings		1	F
3			1	
2			1	
1			1	

No. of rings	1	2	3	4	5	6	7	8
Bit 4	0	0	0	0	0	0	0	0
Bit 3	0	0	0	0	1	1	1	1
Bit 2	0	0	1	1	0	0	1	1
Bit 1	0	1	0	1	0	1	0	1

No. of rings	9	10	11	12	13	14	15	**16**
Bit 4	1	1	1	1	1	1	1	**1**
Bit 3	0	0	0	0	1	1	1	**1**
Bit 2	0	0	1	1	0	0	1	**1**
Bit 1	0	1	0	1	0	1	0	**1**

16.8.64 SOFT SWITCH: #62

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Reserved	Reserved	0	

16.8.65 SOFT SWITCH: #63

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	# key definition in PBX mode	0: default is internal **1: default is external**	1	8
7	Reserved	Reserved	0	
6	Reserved	Reserved	0	
5	Reserved	Reserved	0	
4	Reserved	Reserved	0	0
3	Reserved	Reserved	0	
2	Reserved	Reserved	0	
1	Tx Result report with image	**0: Yes** 1: No	0	

- Bit 8: if this bit set to “1”, the # key is used to access PSTN line instead of the pre-fix number which is dialed in front of the TEL No. If this bit set to 0, the pre-fix number is used automatically to access PSTN line when the TEL No. is dialed.
- Bit 1: If this bit set to “1”, the first page image will not append at the bottom of error report or OK report

16.8.66 SOFT SWITCH: #64

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	1
7	Reserved	Reserved	0	
6	Print RX error report on RX side if no FAX signal is detected	**0: No** 1: Yes	0	
5	10 PPS & 20 PPS selectable by user	0: No **1: Yes**	1	
4	Reserved		0	0
3	Reserved		0	
2	Reserved		0	
1	Reserved		0	

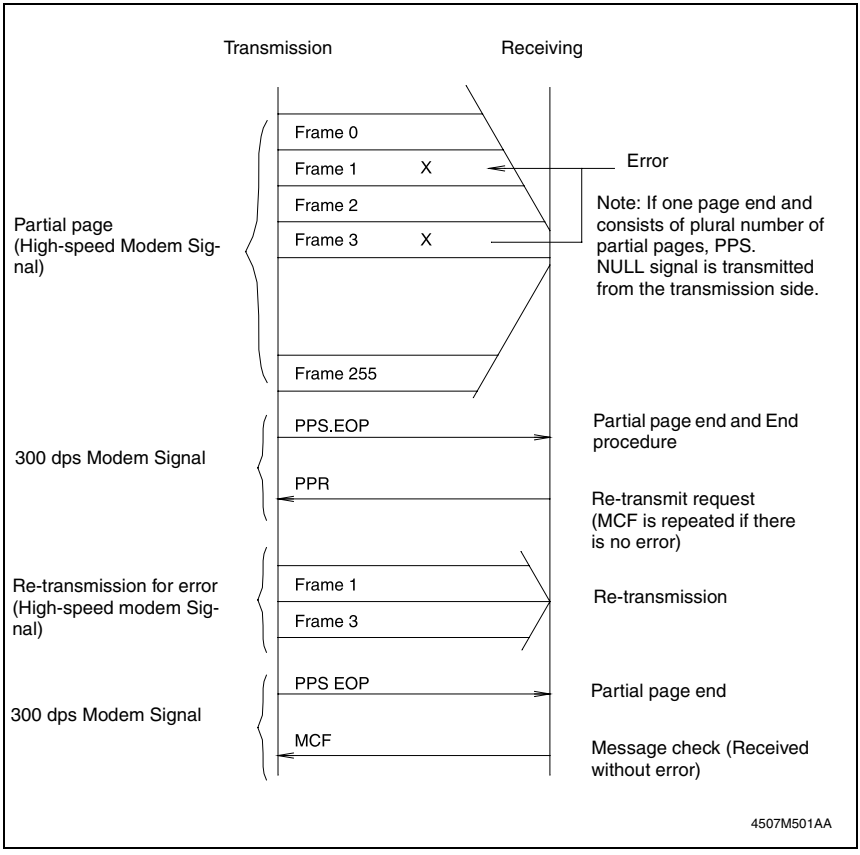
- Bit 6: If this bit set to “1”, Machine does not print a RX error report if no Fax signal from the other party is detected.
- Bit 5: Prevents user to change PPS if this bit set to “0.”

17. Fax Protocols

17.1 G3 ECM (G3 Error Correction Mode)

- G3 ECM is the error correction system newly recommended by Consultative Committee of International Telephone & Telegraph of 1988.

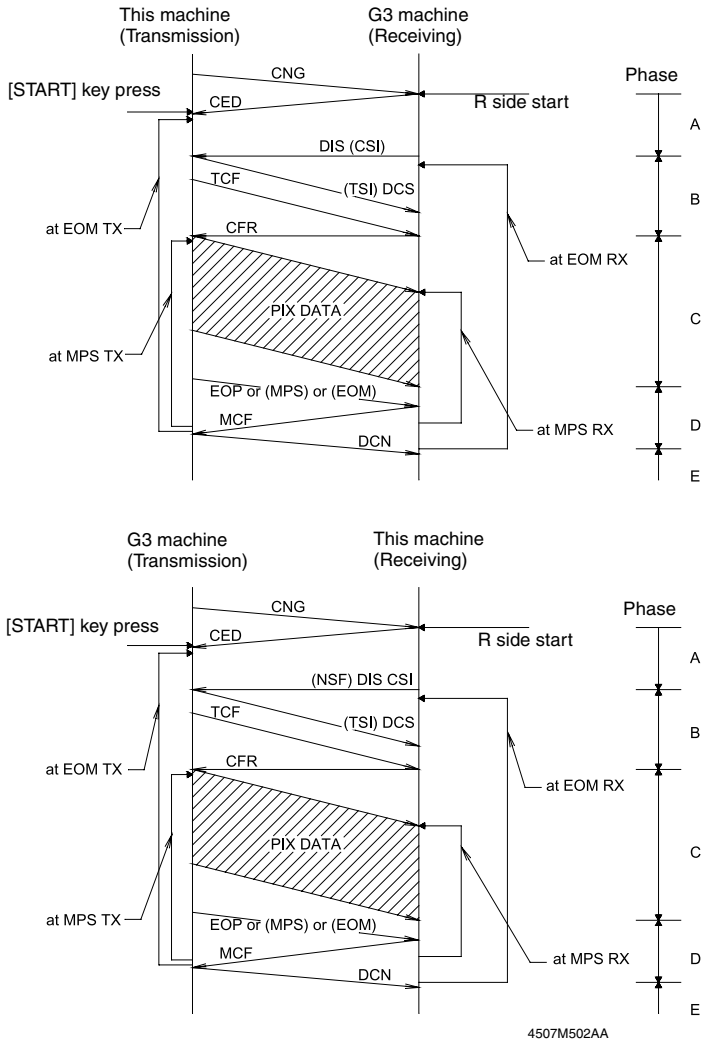
- By G3 ECM, documents are divided into blocks (called partial page) for transmission. If any error takes place in any frame (one partial page consists of 256 frames) on a partial page, the receiving party generates the retransmit request with erroneous frame numbers.
  Here is an example where frame 1 and frame 3 are subjected to error:



17.2 Line control

17.2.1 Procedure of G3 mode communication

- Basic communications diagram of G3 mode.



Drawing: Line Control

17.3 Table of reference code

Code	Function
CFR	Confirmation to Receive. 1850 Hz or 1650 Hz 3 sec.
CIG	Calling Station Identification.
CRP	Command Repeat.
CSI	Called Subscriber Identification.
DCN	Disconnect.
DCS	Digital Identification Signal.
DIS	Digital Transmit Command.
DTC	Digital Transmit Command.
EOM	End of Message. 1,100 Hz.
EOP	End of Procedure.
FTT	Failure to Train.
MCF	Message Confirmation. 1,650 Hz or 1,850 Hz.
MPS	Multi-Page Signal.
NCS	Non-Standard Facilities Command.
NCF	Non-Standard Facilities.
NSS	Non-Standard Facilities Set-up.
PIN	Procedural Interrupt Negative.
PIP	Procedural Interrupt Positive.
PRI-EOM	Procedure Interrupt-End of Message (COM).
PRI-MPS	Procedure Interrupt-Multi page Signal (MPS).
PRI-EOP	Procedure Interrupt-End of Procedure (EOP).
RTN	Retrain Negative.
RTP	Retrain Positive.
TSI	Transmitting Station Identification.

17.4 How to analyze the T30 protocol monitor

- DCS or DIS
- HEX Data as printed on page.

☞ 132, 152

- Example: V.17 Communication

PROTOCOL MONITOR REPORT

NAME: ABC
TEL:886 3 4733507
DATE: APR.23'04 12:20

SESSION	FUNCTION	NO	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	01	ABC 22345678901234567890	DEC.02	15:00	008	00h00min00s	ECM-12	OK

TX	RX	DATA
		FF 13 83 00 46 88 00...

FIF (Facsimile Information Field)

FCF (Facsimile Control Field) = 83: DCS, 80: DIS

Means Last Control Field.

Means address

- FIF (Facsimile Information Field)

HEX	1								2							
	0		0		4		6		8		8		0		0	
Data Bit	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Bit No.	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9	24	23	22	21	20	19	18	19	32	31	30	29	28	27	26	25
Note	Bit No.11= 1, Bit No.12=0 7200 bps Bit No.15= 1 R8 x 7.7 Lines/mm (Fine Mode) Bit No.19= 0, Bit No.20=1 Unlimited Paper Length																															

- Hex-Binary Conversion List

Hex	Binary				Hex	Binary				Hex	Binary				Hex	Binary			
0	0	0	0	0	4	0	1	0	0	8	1	0	0	0	C	1	1	0	0
1	0	0	0	1	5	0	1	0	1	9	1	0	0	1	D	1	1	0	1
2	0	0	1	0	6	0	1	1	0	A	1	0	1	0	E	1	1	1	0
3	0	0	1	1	7	0	1	1	1	B	1	0	1	1	F	1	1	1	1

DIS(DTC)/ DCS Bit Allocation Table of FIF (Facsimile Information Field)

<table>
<tr><th>Bit No.</th><th>Designation</th><th>DIS/DTC</th><th>DCS</th></tr>
<tr><td>1</td><td colspan="3">“0”= Invalid
“1”= Store-and-forward switching Internet fax simple mode</td></tr>
<tr><td>2</td><td colspan="3">Set to “0”</td></tr>
<tr><td>3</td><td colspan="3">“0”= Invalid
“1”= Real-time Internet fax</td></tr>
<tr><td>4</td><td colspan="3">Set to “0”</td></tr>
<tr><td>5</td><td colspan="3">Set to “0”</td></tr>
<tr><td>6</td><td colspan="2">“0”= Invalid
“1”= V.8 capabilities</td><td>Invalid</td></tr>
<tr><td>7</td><td>Flame size</td><td>“0” = 256 octets preferred
“1”= 64 octets preferred</td><td>Invalid</td></tr>
<tr><td>8</td><td colspan="3">Set to “0”</td></tr>
<tr><td>9</td><td colspan="2">“0”= Invalid
“1”= Ready to transmit a facsimile document (polling)</td><td>Set to “0”</td></tr>
<tr><td>10</td><td colspan="3">“0”= Invalid
“1”= Receiver fax operation</td></tr>
<tr><td>11
12
13
14</td><td>Data signalling rate</td><td>
<table>
<tr><th colspan="4">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>14</th><th>13</th><th>12</th><th>11</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>V.27 ter fall-back mode</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>Rec. V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>Rec. V.27 ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>Rec. V.27 ter and V.29</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>Rec. V.27 ter, V.29, V33 and V.17</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="4">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>14</th><th>13</th><th>12</th><th>11</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>2400 bit/s, rec. V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>9600 bit/s, rec. V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>4800 bit/s, rec. V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>7200 bit/s, rec. V.29</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>Invalid</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>Reserved</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>Invalid</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>14,400 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>1</td><td>9,600 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>12,000 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>7,200 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
</table>
</td></tr>
<tr><td>15</td><td colspan="3">“0”= Invalid
“1”= R8 × 7.7 lines/mm and/or 200 × 200 pels/25.4 mm</td></tr>
</table>

<table>
<tr><th>Bit No.</th><th>Designation</th><th>DIS/DTC</th><th>DCS</th></tr>
<tr><td>16</td><td colspan="2">“0”= Invalid
“1”= Two-dimensional coding capability</td><td>“0”= Invalid
“1”= Two-dimensional coding</td></tr>
<tr><td>17
18</td><td>Recording width capabilities</td><td>
<table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>18</th><th>17</th></tr>
<tr><td>0</td><td>0</td><td>Scan line length 215 mm ± 1%</td></tr>
<tr><td>0</td><td>1</td><td>Scan line length 215 mm ± 1%
and scan line length 255 mm ± 1%</td></tr>
<tr><td>1</td><td>0</td><td>Scan line length 215 mm ± 1%
and scan line length 255 mm ± 1%
and scan line length 303 mm ± 1%</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>18</th><th>17</th></tr>
<tr><td>0</td><td>0</td><td>Scan line length 215 mm ± 1%</td></tr>
<tr><td>0</td><td>1</td><td>Scan line length 215 mm ± 1%</td></tr>
<tr><td>1</td><td>0</td><td>Scan line length 303 mm ± 1%</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table>
</td></tr>
<tr><td>19
20</td><td>Recording length capability</td><td>
<table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Recording length capability</th></tr>
<tr><th>20</th><th>19</th></tr>
<tr><td>0</td><td>0</td><td>A4 (297 mm)</td></tr>
<tr><td>0</td><td>1</td><td>A4 (297 mm) and B4 (364 mm)</td></tr>
<tr><td>1</td><td>0</td><td>Unlimited</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Recording length capability</th></tr>
<tr><th>20</th><th>19</th></tr>
<tr><td>0</td><td>0</td><td>A4 (297 mm)</td></tr>
<tr><td>0</td><td>1</td><td>B4 (364 mm)</td></tr>
<tr><td>1</td><td>0</td><td>Unlimited</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table>
</td></tr>
<tr><td>21
22
23</td><td></td><td>
<table>
<tr><th colspan="3">Bit No.</th><th rowspan="2">Minimum scan line time capability at the receive</th></tr>
<tr><th>23</th><th>22</th><th>21</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>20 ms at 3.85 1/mm: T 7.7 = T 3.85 20 ms</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>5 ms at 3.85 1/mm: T 7.7 = T 3.85</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>10 ms at 3.85 1/mm: T 7.7 = T 3.85 10 ms</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>20 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>40 ms at 3.85 1/mm: T 7.7 = T 3.85 40 ms</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>40 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>10 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0 ms at 3.85 1/mm: T 7.7 = T 3.85</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="3">Bit No.</th><th rowspan="2">Minimum scan line time</th></tr>
<tr><th>23</th><th>22</th><th>21</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>20 ms</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>5 ms</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>10 ms</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>40 ms</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0 ms</td></tr>
</table>
</td></tr>
<tr><td>24</td><td>Extension field</td><td colspan="2">“0”= Without
“1”= With</td></tr>
<tr><td>25</td><td colspan="3">Reserved</td></tr>
<tr><td>26</td><td colspan="3">“0”= Invalid
“1”= Un-compressed mode</td></tr>
</table>

Bit No.	Designation	DIS/DTC	DCS
27	"0"= Invalid "1"= ECM		
28	Set to "0"		Frame size 0: 256 octets Frame size 1: 64 octets
29	Set to "0"		
30	Set to "0"		
31	"0"= Invalid "1"= T.6 coding capability		"0"= Invalid "1"= T.6 coding enabled
32	Extend field	"0"= Without "1"= With	
33	"0"= Invalid "1"= Field not valid capability		
34	"0"= Invalid "1"= Multiple selective polling capability		Set to "0"
35	"0"= Invalid "1"= Polling subaddress transmission (DTC) by Polled Sub-Address (DIS)/PSA		Set to "0"
36	"0"= Invalid "1"= T.43 coding		
37	"0"= Invalid "1"= Plane interleave		
38	Set to "0"		
39	Set to "0"		
40	Extend field	"0"= Without "1"= With	
41	"0"= Invalid "1"= R8 x 15.4 lines/mm		
42	"0"= Invalid "1"= 300 x 300 pels/25.4 mm		
43	"0"= Invalid "1"= R16 x 15.4 lines/mm and/or 400 x 400 pels/25.4 mm		
44	"0"= Invalid "1"= Inch based resolution preferred		Resolution type selection "0"= metric based resolution "1"= inch based resolution
45	"0"= Invalid "1"= Metric based resolution preferred		Do not care
46	Minimum scan line time capability for higher resolutions.	"0": T 15.4 = T 7.7 "1": T 15.4 = 1/2 T 7.7	Do not care
47	"0"= Invalid "1"= Selective polling (DIS)/ Selective polling transmission (DTC)		Set to "0"
48	Extend field	0: Without 1: With	
49	"0"= Invalid "1"= Sub Addressing capability		"0"= Invalid "1"= Sub Addressing transmission

Bit No.	Designation	DIS/DTC	DCS
50	"0"= Invalid "1"= Password/ Sender Identification capability (DIS)/ Password transmission (DTC)		"0"= Invalid "1"= Sender Identification transmission
51	"0"= Invalid "1"= Ready to transmit a data file (polling)		Set to "0"
52	Set to "0"		
53	"0"= Invalid "1"= Binary File Transfer (BFT)		
54	"0"= Invalid "1"= Document Transfer Mode (DTM)		
55	"0"= Invalid "1"= EDIFACT Transfer (EDI)		
56	Extend field	0: Without 1: With	
57	"0"= Invalid "1"= Basic Transfer Mode (BTM)		
58	Set to "0"		
59	"0"= Invalid "1"= Ready to transmit a character or mixed mode document (polling)		Set to "0"
60	"0"= Invalid "1"= Character mode		
61	Set to "0"		
62	"0"= Invalid "1"= Mixed mode		
63	Set to "0"		
64	Extend field	"0"= Without "1"= With	
65	"0"= Invalid "1"= Processable mode 26		
66	"0"= Invalid "1"= Digital network capability		
67	Duplex and half duplex capabilities	"0"= Half duplex operation only "1"= Duplex and half duplex operation	"0"= Half duplex operation only "1"= Duplex operation
68	"0"= Invalid "1"= JPEG coding		
69	"0"= Invalid "1"= Full color mode		
70	Set to "0"		"0"= Invalid "1"= Preferred Huffmann tables
71	"0"= Invalid "1"= 12 bit/pixel/element		
72	Extend field	"0"= Without "1"= With	
73	"0"= Invalid "1"= No sampling (1:1:1)		

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Bit No.	Designation	DIS/DTC	DCS
74	"0"= Invalid "1"= Nonstandard radiation light		
75	"0"= Invalid "1"= Nonstandard is mute range		
76	"0"= Invalid "1"= North American Letter (215.9 mm × 279.4 mm) capacity		"0"= Invalid "1"= North American Letter (215.9 mm × 279.4 mm)
77	"0"= Invalid "1"= North American Legal (215.9 mm × 355.6 mm) capacity		"0"= Invalid "1"= North American Legal (215.9 mm × 355.6 mm)
78	"0"= Invalid "1"= Single layer sequential encoding, basic capacity		"0"= Invalid "1"= Single layer sequential encoding, basic
79	"0"= Invalid "1"= Single layer sequential encoding, optional L0 capacity		
80	Extend field	"0"= Without "1"= With	
81	"0"= Invalid "1"= HKM key management capacity		"0"= Invalid "1"= HKM key management selection
82	"0"= Invalid "1"= RSA key management capacity		"0"= Invalid "1"= RSA key management selection
83	"0"= Invalid "1"= Override mode capacity		"0"= Invalid "1"= Override mode function
84	"0"= Invalid "1"= HFX40 code capacity		"0"= Invalid "1"= HFX40 code selection
85	"0"= Invalid "1"= Alternative code number 2 capacity		"0"= Invalid "1"= Alternative code number 2 selection
86	"0"= Invalid "1"= Alternative code number 3 capacity		"0"= Invalid "1"= Alternative code number 3 selection
87	"0"= Invalid "1"= HFX40-1 hashing capacity		"0"= Invalid "1"= HFX40-1 hashing selection
88	Extend field	"0"= Without "1"= With	
89	"0"= Invalid "1"= Alternative hashing system number 2 capacity		"0"= Invalid "1"= Alternative hashing system number 2 selection
90	"0"= Invalid "1"= Alternative hashing system number 3 capacity		"0"= Invalid "1"= Alternative hashing system number 3 selection
91	Reserved		
92	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
93	"0"= Invalid "1"= T.44 (Mixed raster content) mode		

Bit No.	Designation	DIS/DTC	DCS
94	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
95	"0"= Invalid "1"= Page length maximum strip size for T.44 (Mixed raster content)		
96	Extend field	"0"= Without "1"= With	
97	"0"= Invalid "1"= Color/mono-color multi-value 300 pixels x 300 pixels or 400 pixels x 400 pixels / 25.4 mm		
98	"0"= Invalid "1"= R4 x 3.85 lines/mm and/or 100 pixels x 100 pixels / 25.4 mm for color/mono-color multi-value		
99	"0"= Invalid "1"= Single phase C BFT negotiation capacity		
100	Set to "0"		
101	Set to "0"		
102	Set to "0"		
103	Set to "0"		
104	Extend field	"0"= Without "1"= With	

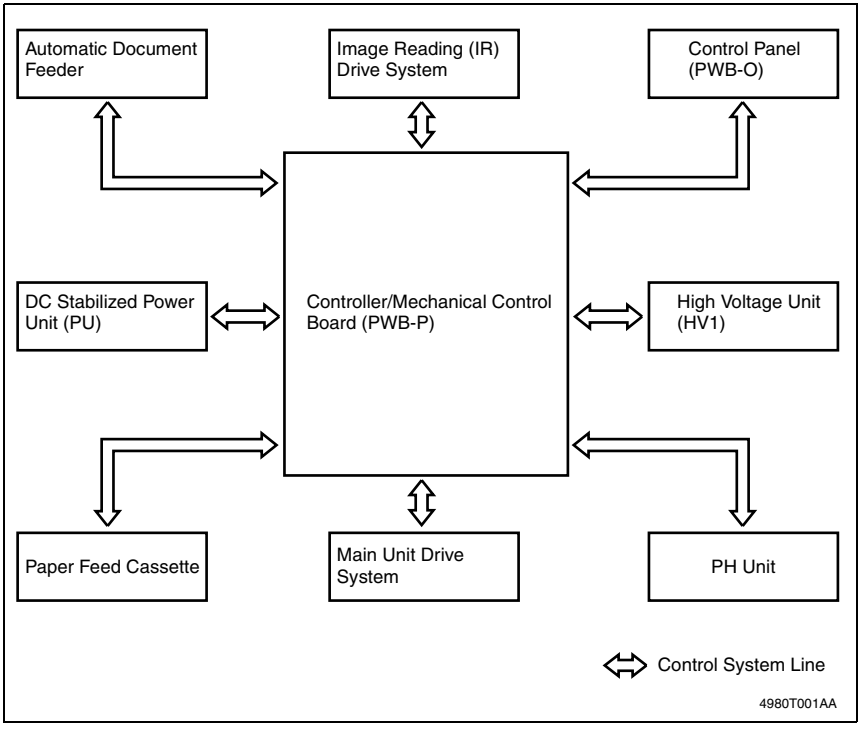
Troubleshooting

18. Introduction

- This chapter contains the items required or used when troubleshooting various printer problems.

18.1 Overall Control Configuration

- Understanding the overall control configuration will help perform the troubleshooting procedures for paper misfeeds, malfunctions, and image problems.

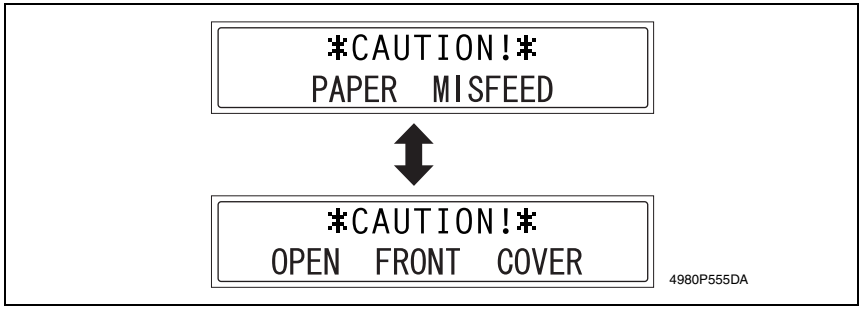


19. Jam display

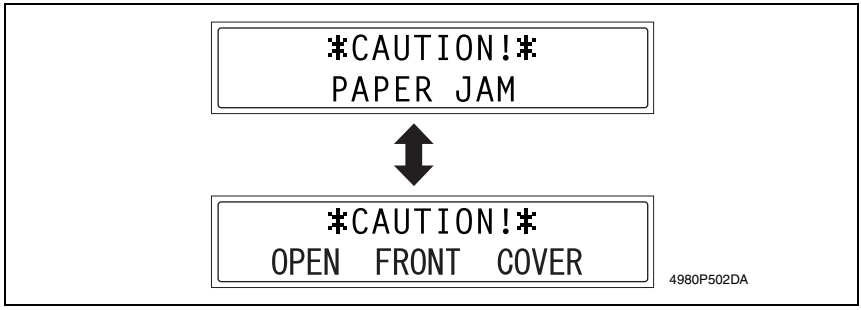
19.1 Misfeed Displays

- The Error indicator lights up and a message appears in the display when a paper misfeed occurs.

Paper Take-Up Section Misfeed



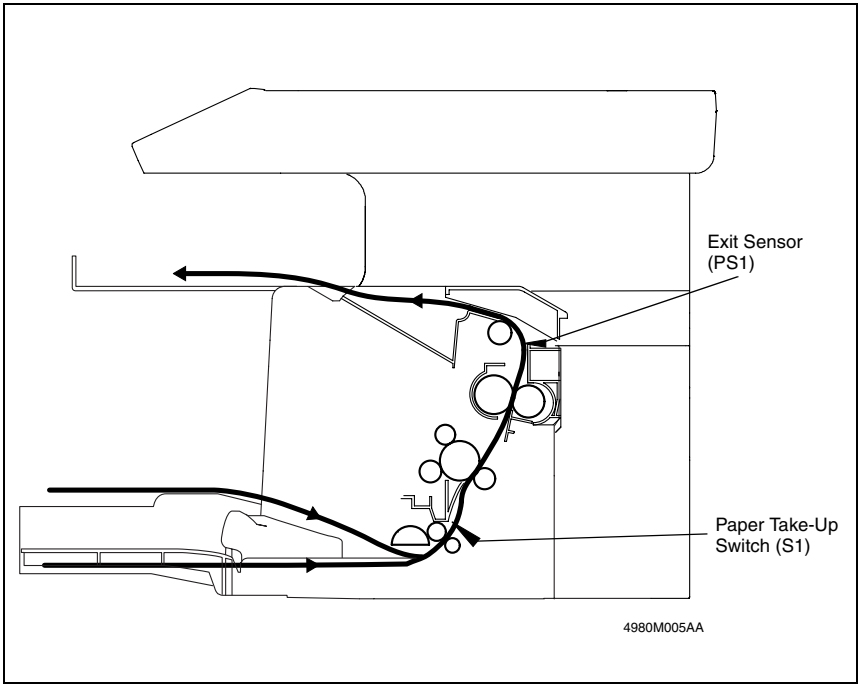
Transport Section Misfeed



19.1.1 Misfeed Display Resetting Procedure

1. Open the appropriate covers, remove the misfed paper and any remaining paper, and then close the covers.
2. Open, then close the Front Door.

19.2 Sensor layout



19.3 Solution

19.3.1 Initial Check Items

- When a paper misfeed occurs in the printer, first make the following initial checks.

Check	Action
Does the paper meet product specifications?	• Replace paper.
Is the paper curled, wavy, or damp?	• Replace paper. • Instruct user in correct paper storage.
Is the paper transport path deformed, dirty, or obstructed with foreign matter?	• Clean the paper path and replace if necessary.
Are the Paper Separator Fingers dirty, deformed, or worn?	• Replace Fusing Unit.
Is the roller dirty, deformed, or worn?	• Clean the roller and replace if necessary.
Are Edge Guides at correct position to accommodate paper?	• Slide the Edge Guides up against the edges of the paper stack.
Does the actuator operate correctly when checked?	• Correct or replace the actuator.

Precautions for Clearing Misfeed

- **Reset the misfeed condition by opening and closing the Front Door after the misfeed has been cleared.**

19.3.2 Paper Take-Up/Transport Misfeed

A. Detection Timing

Type	Description
MP tray Pick-up Jam	The Paper Take-Up Switch does not turn on after the predetermined period of time has elapsed after paper take-up began.
2nd tray Pick-up Jam	
Bypass tray Pick-up Jam	
Separator Jam	The Exit Sensor is not blocked after the predetermined period of time has elapsed after the Paper Take-Up Switch is turned on. The Paper Take-Up Switch is not turned off after the predetermined period of time has elapsed after the Paper Take-Up Switch is turned on.

B. Troubleshooting Procedures

Relevant Electrical Parts	
Paper Take-Up Switch (S1) Exit Sensor (PS1) Paper Take-Up Solenoid (SL1)	Controller/Mechanical Control Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Initial checks	–	–
2	SL1 solenoid check	PWB-P MPJ3P-2	B-7
3	S1 switch check	PWB-P MPJ10P-2	F-7
4	PS1 sensor check	PWB-P MPJ8P-3	B-7
5	Replace PWB-P.	–	–

19.3.3 Fusing/Exit Misfeed

A. Detection Timing

Type	Description
Fuser Jam	The Exit Sensor is not unblocked after the predetermined period of time has elapsed after the Paper Take-Up Switch is turned on.
Remains paper Jam 1	If all of the following conditions are met • The Front Door or Exit Cover is opened, then closed. (Or the machine is turned on.) • The Paper Take-Up Switch is turned on or the Exit Sensor is blocked.
Remains paper Jam 2	
Paper exit jam	The Exit Sensor is unblocked slower than the predetermined period of time after the Paper Take-Up Switch is turned on.

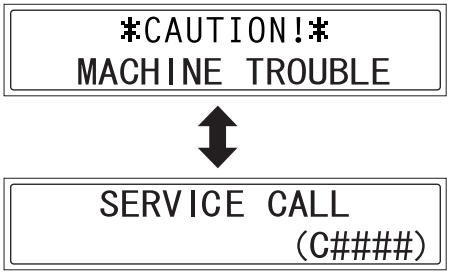
B. Troubleshooting Procedures

Relevant Electric Parts	
Paper Take-Up Switch (S1) Exit Sensor (PS1)	Controller/Mechanical Control Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Initial check items	–	–
2	S1 switch check	PWB-P MPJ10P-2	F-7
3	PS1 sensor check	PWB-P MPJ8P-3	B-7
4	Replace PWB-P.	–	–

20. Malfunction code

- The CPU performs a self-diagnosis on the condition of the unit, and if a malfunction is detected, the warning appears alternately with the error code in the display.



<Procedure for cancelling a malfunction display>
- In the C05XX trouble, turn the machine off, then on with the STOP key held down.
- Except above, cancel the malfunction display by turning the machine off, then on again.

20.1 Trouble code

20.1.1 Trouble code list

Malfunction Code	Malfunction Name	Description
C0045	Fuser fan motor error	• The LOCK signal remains HIGH or LOW continuously for a predetermined period of time while the Cooling Fan Motor remains energized.
C0210	H. V. abnormal	• The Drum Charge Monitor Voltage (HVC_MON) signal falls outside a predetermined range at any time after the lapse of a predetermined period of time after the Power Switch has been turned ON. • The Image Transfer Voltage Monitor signal (T_MON_V) and Image Transfer Current Monitor signal (T_MON_I) fall outside a corresponding predetermined range.
C0500	Fuser warm up error	• The voltage of the Thermistor remains low for a predetermined period of time when a warm-up cycle is started. • The temperature detected by the Thermistor remains lower than a reference value for a predetermined period of time for the period of time that begins 5 sec. after, and ends 9 sec. after, the start of the warm-up cycle (where the temperature detected by the Thermistor is 80 °C or less). • The temperature detected by the Thermistor does not increase for a 3-sec. period or more for the period of time that begins after the lapse of a predetermined period of time after the Fusing Roller Heater Lamp has been turned ON and ends when the lamp is turned OFF. • The Fusing Roller Heater Lamp remains ON for a 30-sec. period or more (except during the period through which the Main Motor remains energized).

Malfunction Code	Malfunction Name	Description
C0510	Fuser temperature low	• The temperature detected by the Thermistor remains lower than the set temperature continuously for a predetermined period of time while the fusing temperature control is being provided. (The set temperatures are as follows: 140 °C during a print mode at 600 dpi; 70 °C during the standby mode.)
C0520	Fuser overheat	• The temperature detected by the Thermistor remains higher than 235 °C for a predetermined period of time while the fusing temperature control is being provided.
C0650	Scanner home sensor error	• The Scanner Home Position Sensor is not detected within the predetermined period of time after the Scanner Motor has started turning.
C1200	ASIC memory abnormal	• An error occurred while writing to or reading the SRAM on the Control Board (PWB-C).
C1300	Polygon mirror motor error	• The LOCK signal is not detected within a predetermined period of time that begins 1 sec. after the Polygon Motor has been energized. • No new LOCK signal is detected for a 1-sec. period that begins 1.5 sec. after the first LOCK signal was detected. • The LOCK signal is not detected for a continuous 0.5-sec. period in a state in which the Polygon Motor runs stably. • The LOCK signal remains ON for a continuous 5-sec. period or more when the Polygon Motor remains deenergized.
C133B	Communication with option error	• Communication could not be established with the Controller Control Board within 5 seconds while printing.
C133C	Modem error	• A malfunction occurred in the Modem.
C133D	ROM checksum error	• A malfunction occurred in the ROM.
C13F0	Laser error	• The laser output exceeds the upper limit value. • The laser output remains lower than the lower limit value.
C1468	Parameter Chip error	• An Parameter Chip not written with initial data was detected.
C14A3	IR lamp malfunction	• The luminosity level of the Exposure Lamp is not stabilized within the predetermined period of time.

20.2 Solution

20.2.1 C0045: Fuser Fan Motor Error

A. Detection Timing

Description
• The LOCK signal remains HIGH or LOW continuously for a predetermined period of time while the Cooling Fan Motor remains energized.

B. Troubleshooting Procedures

Relevant Electric Parts	
Cooling Fan Motor (M2)	Controller/Mechanical Control Board (PWB-P) Power Unit (PU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Check the Motor connectors for connection and correct as necessary.	–	–
2	Check the fan for possible overload and correct as necessary.	–	–
3	M2 operation check	PWB-P MPJ13P-1 to 3 (pulse)	B-8
4	M3 operation check	PWB-P MPJ6P-1 to 3 (pulse)	B-9
5	Replace PWB-P.	–	–

20.2.2 C0210: H.V. Abnormal

A. Detection Timing

Description
• The Drum Charge Monitor Voltage (HVC_MON) signal falls outside a predetermined range at any time after the lapse of a predetermined period of time after the Power Switch has been turned ON. • The Image Transfer Voltage Monitor signal (T_MON_V) and Image Transfer Current Monitor signal (T_MON_I) fall outside a corresponding predetermined range.

B. Troubleshooting Procedures

Relevant Electric Parts	
Fusing Unit	Controller/Mechanical Control Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Replace Fusing Unit.	–	–
2	Replace PWB-P.	–	–

20.2.3 C0500: Fuser Warm Up Error

A. Detection Timing

Description
• The voltage of the Thermistor remains low for a predetermined period of time when a warm-up cycle is started. • The temperature detected by the Thermistor remains lower than a reference value for a predetermined period of time for the period of time that begins 5 sec. after, and ends 9 sec. after, the start of the warm-up cycle (where the temperature detected by the Thermistor is 80 °C or less). • The temperature detected by the Thermistor does not increase for a 3-sec. period or more for the period of time that begins after the lapse of a predetermined period of time after the Fusing Roller Heater Lamp has been turned ON and ends when the lamp is turned OFF. • The Fusing Roller Heater Lamp remains ON for a 30-sec. period or more (except during the period through which the Main Motor remains energized).

B. Troubleshooting Procedures

Relevant Electric Parts	
Fusing Unit Thermistor (TH1) Fusing Roller Heater Lamp (H1)	Controller/Mechanical Control Board (PWB-P) Thermostat (TS1) Power Unit (PU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Replace Thermistor (TH1).	–	–
2	Replace Fusing Unit.	–	–
3	Replace Controller/Mechanical Control Board (PWB-P).	–	–
4	Replace Power Unit (PU1).	–	–

20.2.4 C0510: Fuser Temperature Low

A. Detection Timing

Description
• The temperature detected by the Thermistor remains lower than the set temperature continuously for a predetermined period of time while the fusing temperature control is being provided. (The set temperatures are as follows: 140 °C during a print mode at 600 dpi; 70 °C during the standby mode.)

B. Troubleshooting Procedures

Relevant Electric Parts	
Fusing Unit Thermistor (TH1) Fusing Roller Heater Lamp (H1)	Controller/Mechanical Control Board (PWB-P) Thermostat (TS1) Power Unit (PU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Replace Thermistor (TH1).	–	–
2	Replace Fusing Unit.	–	–
3	Replace Controller/Mechanical Control Board (PWB-P).	–	–
4	Replace Power Unit (PU1).	–	–

20.2.5 C0520: Fuser Overheat

A. Detection Timing

Description
• The temperature detected by the Thermistor remains higher than 235 °C for a predetermined period of time while the fusing temperature control is being provided.

B. Troubleshooting Procedures

Relevant Electric Parts	
Fusing Unit Thermistor (TH1) Fusing Roller Heater Lamp (H1)	Controller/Mechanical Control Board (PWB-P) Thermostat (TS1) Power Unit (PU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Replace Thermistor (TH1).	–	–
2	Replace Fusing Unit.	–	–
3	Replace Controller/Mechanical Control Board (PWB-P).	–	–
4	Replace Power Unit (PU1).	–	–

20.2.6 C0650: Scanner Home Sensor Error

A. Detection Timing

Description
• The Scanner Home Position Sensor is not detected within the predetermined period of time after the Scanner Motor has started turning.

B. Troubleshooting Procedures

Relevant Electrical Components	
Scanner Motor (M4)	Controller/Mechanical Control Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	M4 operation check	–	–
2	Replace PWB-P.	–	–

20.2.7 C1200: ASIC Memory Abnormal

A. Detection Timing

Description
• An error occurred while writing to or reading the SRAM on the Control Board (PWB-C).

B. Troubleshooting Procedures

Relevant Electrical Components	
Controller/Mechanical Control Board (PWB-P)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Turn the copier off, then on again.	–	–
2	Check the connection of the memory on the PWB-P, and then correct it if necessary.	–	–
3	Replace PWB-P.	–	–

20.2.8 C1300: Polygon Mirror Motor Error

A. Detection Timing

Description
• The LOCK signal is not detected within a predetermined period of time that begins 1 sec. after the Polygon Motor has been energized. • No new LOCK signal is detected for a 1-sec. period that begins 1.5 sec. after the first LOCK signal was detected. • The LOCK signal is not detected for a continuous 0.5-sec. period in a state in which the Polygon Motor runs stably. • The LOCK signal remains ON for a continuous 5-sec. period or more when the Polygon Motor remains deenergized.

B. Troubleshooting Procedures

Relevant Electric Parts	
PH Unit Flat cable	Controller/Mechanical Control Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Check cables for connection and correct as necessary.	–	–
2	Replace PH Unit.	–	–
3	Replace PWB-P.	–	–

20.2.9 C133B: Communication with Option Error

A. Detection Timing

Description
• Communication could not be established with the Controller Control Board within 5 seconds while printing.

B. Troubleshooting Procedures

Relevant Electrical Components	
Controller/Mechanical Control Board (PWB-P)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Replace PWB-P.	–	–

20.2.10 C133C: Modem Error

A. Detection Timing

Description
• A malfunction occurred in the Modem.

B. Troubleshooting Procedures

Relevant Electrical Components	
Network Control Unit Board (NCU)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Replace NCU.	–	–

20.2.11 C133D: ROM Checksum Error

A. Detection Timing

Description
• A malfunction occurred in the ROM.

B. Troubleshooting Procedures

Relevant Electrical Components	
Controller/Mechanical Control Board (PWB-P)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Replace PWB-P.	–	–

20.2.12 C13F0: Laser Error

A. Detection Timing

Description
• The laser output exceeds the upper limit value. • The laser output remains lower than the lower limit value.

B. Troubleshooting Procedures

Relevant Electric Parts	
PH Unit Flat cable	Controller/Mechanical Control Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Check cables for connection and correct as necessary.	–	–
2	Replace PH Unit.	–	–
3	Replace PWB-P.	–	–

20.2.13 C1468: Parameter Chip Error

A. Detection Timing

Description
• An Parameter Chip not written with initial data was detected.

B. Troubleshooting Procedures

Relevant Electric Parts	
Controller/Mechanical Control Board (PWB-P)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Unplug, then plug in the power cord, and turn off the copier, then turn it on again.	–	–
2	Check the connection of the Parameter Chip on the PWB-P, and then correct it if necessary.	–	–
3	Replace PWB-P.	–	–
4	Replace Parameter Chip.	–	–

20.2.14 C14A3: IR Lamp Malfunction

A. Detection Timing

Description
• The luminosity level of the Exposure Lamp is not stabilized within the predetermined period of time.

B. Troubleshooting Procedures

Relevant Electric Parts	
IR Unit	Controller/Mechanical Control Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electric Parts)
1	Check the connection of the connectors, and then correct them if necessary.	–	–
2	Replace PWB-P.	–	–
3	Replace the Scanner Assy.	–	–

21. Power supply trouble

21.1 Power is not turned ON.

Relevant Electric Parts	
Controller/Mechanical Control Board (PWB-P)	Power Unit (PU1)

Step	Check	Wiring Diagram (Location)	Result	Action
1	Is the power cord plugged into the power outlet?	–	NO	Plug the power cord into the power outlet.
2	Is the power cord connected properly to the printer?	–	NO	Plug the power cord into the printer.
3	Is the Power Switch turned ON?	–	NO	Turn ON the Power Switch.
4	Are the fuses (F101 and F102) on the Power Unit conducting?	–	NO	Replace Power Unit (PU1).
		–	YES	Replace Controller/Mechanical Control Board (PWB-P).

22. Image quality problem

22.1 Troubleshooting Image Quality Problems

- This chapter is divided into two parts: “Initial Checks” and “Troubleshooting for Specific Image Quality Problems”.
- If an image quality problem occurs, first go through the “Initial Checks” and, if the cause is still not identified, continue to “Troubleshooting for Specific Image Quality Problems”.

22.2 How to Identify Problematic Part

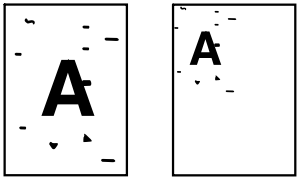
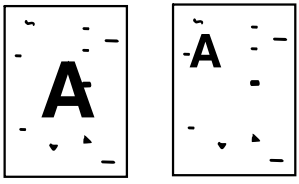
22.2.1 Initial Check Items

- Determine if the failure is attributable to a basic cause or causes.

Section	Step	Check	Result	Action
Installation site	1	The installation size complies with the requirements specified in “PRECAUTIONS FOR INSTALLATION” contained in the “GENERAL” section.	NO	Change the installation site.
Paper	2	The paper meets product specifications.	NO	Instruct the user to use recommended paper that meets product specifications.
	3	The paper is damp.	YES	Change the paper. Instruct the user on the correct methods for storing paper.
Original document	4	The document is not flat.	YES	Correct the document.
	5	Copies of a faint document (written in light pencil, etc.) are being made.	YES	Instruct the user to use a document with an appropriate image density.
	6	Copies of a highly transparent document (OHP film, etc.) are being made.	YES	Instruct the user on how to copy transparent documents.
	7	The Original Glass is dirty or scratched.	YES	Clean or replace the Original Glass.
PM parts	8	PM parts relating to image formation have reached the end of cleaning/replacement cycles.	YES	Clean or replace the PM parts.
Adjustments	9	There are adjustments that can improve image quality problems by being performed again.	YES	Perform the adjustment again.

22.3 Troubleshooting for Specific Image Quality Problems

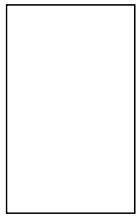
- Determine if the failure is attributable to the input system (Image Reading Section) or the output system (Engine section).

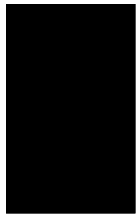
<table>
<tr><th>Check</th><th>Result</th><th>Cause</th></tr>
<tr><td rowspan="2">Copy made at a reduced zoom ratio
 
1177T03YA</td><td>Full-size copy Reduced copy
 
1177T04YA</td><td>Input (image reading) system</td></tr>
<tr><td>Full-size copy Reduced copy
 
1177T05YA</td><td>Output (printer) system</td></tr>
</table>

22.4 Solution

22.4.1 Image Reading System: Blank or Black Prints

<Sample of Image Quality Problem>


4011T035AA

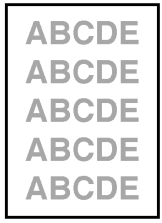

4011T036AA

A. Troubleshooting Procedures

Step	Check	Result	Action
1	Are there no bent connector pins on the cables connecting the control boards, are all connectors correctly plugged in, and are no cables broken?	NO	Correctly plug in the connectors. Replace connection cables.
2	Does the Exposure Lamp light up?	NO	Replace the Scanner Assy.

22.4.2 Image Reading System: Low Image Density

<Sample of Image Quality Problem>



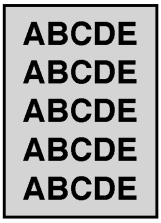
4011T003AA

A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is the surface of the Original Glass dirty?	YES	Clean it.
2	Are the Shading Sheet or back surface of the Original Glass dirty?	YES	Clean them.
3	Are the mirror or lens dirty?	YES	Clean them. Replace the Scanner Assy.
4	Is the Exposure Lamp dirty?	YES	Clean it. Replace the Scanner Assy.
5	Are there no bent connector pins on the cables connecting the control boards, are all connectors correctly plugged in, and are no cables broken?	NO	Correctly plug in the connectors. Replace connection cables.

22.4.3 Image Reading System: Foggy Background or Rough Image

<Sample of Image Quality Problem>



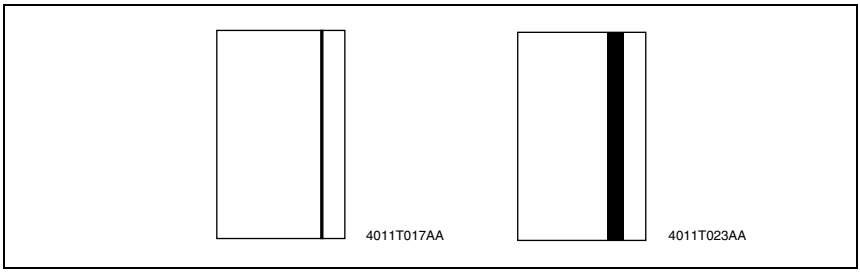
4011T004AA

A. Troubleshooting Procedures

Step	Check	Result	Action
1	Does sunlight or any other extraneous light enter the machine?	YES	Protect the copier from extraneous light.
2	Is the document damaged or dirty?	YES	Replace the document.
3	Is the Original Pad dirty?	YES	Clean it.
4	Does the Original Cover not lie flat?	YES	If the Original Cover is deformed or the hinges are damaged, replace the Original Cover.
5	Is the surface of the Original Glass dirty?	YES	Clean it.
6	Are the Shading Sheet or back surface of the Original Glass dirty?	YES	Clean them.
7	Are the mirror or lens dirty?	YES	Clean them. Replace the Scanner Assy.
8	Is the Exposure Lamp dirty?	YES	Clean it. Replace the Scanner.
9	Are there no bent connector pins on the cables connecting the control boards, are all connectors correctly plugged in, and are no cables broken?	NO	Correctly plug in the connectors. Replace connection cables.

22.4.4 Image Reading System: Black Streaks or Bands

<Sample of Image Quality Problem>

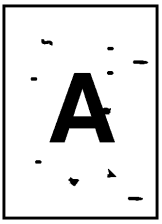


A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is the document damaged or dirty?	YES	Replace the document.
2	Is the Original Pad dirty?	YES	Clean it.
3	Does the Original Cover not lie flat?	YES	If the Original Cover is deformed or the hinges are damaged, replace the Original Cover.
4	Is the surface of the Original Glass dirty?	YES	Clean it.
5	Are the Shading Sheet or back surface of the Original Glass dirty?	YES	Clean them.
6	Are the mirror or lens dirty?	YES	Clean them. Replace the Scanner Assy.
7	Is the Exposure Lamp dirty?	YES	Clean it. Replace the Scanner Assy.
8	Are there no bent connector pins on the cables connecting the control boards, are all connectors correctly plugged in, and are no cables broken?	NO	Correctly plug in the connectors. Replace connection cables.

22.4.5 Image Reading System: Black Spots

<Sample of Image Quality Problem>



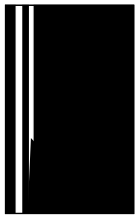
4011T521AA

A. Troubleshooting Procedures

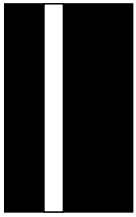
Step	Check	Result	Action
1	Is the document damaged or dirty?	YES	Replace the document.
2	Is the Original Pad dirty?	YES	Clean it.
3	Is the Original Glass dirty?	YES	Clean it.
4	The problem has been eliminated after performing step 3.	NO	Replace the Scanner Assy.

22.4.6 Image Reading System: Blank Streaks or Bands

<Sample of Image Quality Problem>



4011T015AA



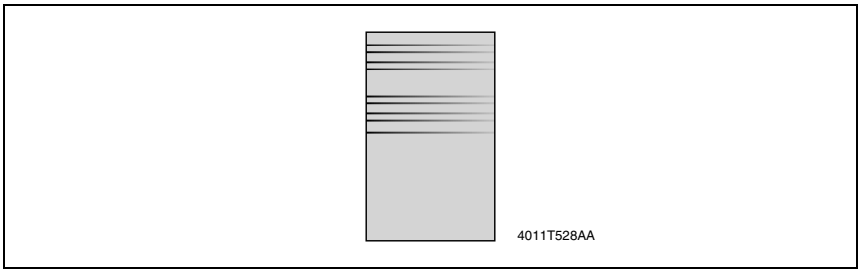
4011T020AA

A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is the document damaged or dirty?	YES	Replace the document.
2	Is the Original Pad dirty?	YES	Clean it.
3	Does the Original Cover not lie flat?	YES	If the Original Cover is deformed or the hinges are damaged, replace the Original Cover.
4	Is the surface of the Original Glass dirty?	YES	Clean it.
5	Are the Shading Sheet or back surface of the Original Glass dirty?	YES	Clean them.
6	Are the mirror or lens dirty?	YES	Clean them. Replace the Scanner Assy.
7	Is the Exposure Lamp dirty?	YES	Clean it. Replace the Scanner Assy.
8	Are there no bent connector pins on the cables connecting the control boards, are all connectors correctly plugged in, and are no cables broken?	NO	Correctly plug in the connectors. Replace connection cables.

22.4.7 Image Reading System: Uneven Image

<Sample of Image Quality Problem>

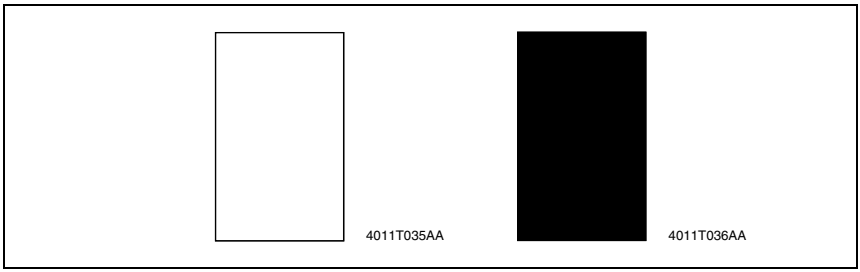


A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is the Scanner Motor drive being transmitted?	NO	Correct drive coupling mechanisms. Replace it.
2	Is the harness of the Exposure Lamp catching?	YES	Correct it.
3	Is there enough slack in the Belt?	NO	Correct it. Replace the Belt.
4	Are the Scanner Rails scratched or dirty?	YES	Clean them.
5	Are there no bent connector pins on the cables connecting the control boards, are all connectors correctly plugged in, and are no cables broken?	NO	Correctly plug in the connectors. Replace connection cables.
6	The problem has been eliminated after performing step 5.	NO	Replace the Scanner Assy. Replace the IR Unit.

22.4.8 Printer System: Blank or Black Prints

<Typical Faulty Images>

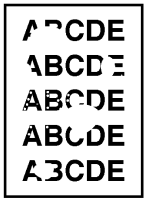


A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is a printed page blank?	YES	Check PH Unit connectors for proper connection.
2	Is the coupling of the drive mechanism of the Imaging Cartridge properly connected?	NO	Check coupling of drive mechanism for connection and correct as necessary, or replace Imaging Cartridge (Drum Cartridge, Toner Cartridge).
3	Is the drum charge voltage contact point or PC Drum ground contact point of the Imaging Cartridge properly connected?	NO	Check, clean, or correct contact point.
4	Is the High Voltage Unit (HV1) connector connected properly?	NO	Connect it properly.
5	Is the problem eliminated when step 4 was checked?	NO	Replace High Voltage Unit (HV1).
			Replace Controller/Mechanical Control Board (PWB-P).
			Replace PH Unit.

22.4.9 Printer System: Blank Spots

<Typical Faulty Image>



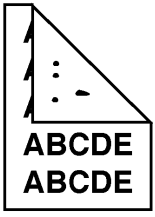
4011T008AA

A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is paper damp?	YES	Replace paper for one just unwrapped.
2	Is the PC Drum scratchy?	YES	Replace Drum Cartridge.
3	Is there foreign matter on paper path?	YES	Remove foreign matter.
4	Is Image Transfer Roller dirty or scratchy?	YES	Replace Image Transfer Roller.
			Replace High Voltage Unit (HV1).
			Replace Controller/Mechanical Control Board (PWB-P).

22.4.10 Printer System: Smears on Back

<Typical Faulty Image>



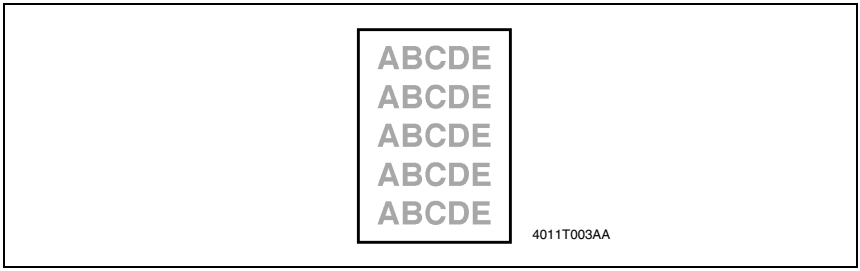
4011T009AA

A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is there foreign matter on paper path?	YES	Remove foreign matter.
2	Is Fusing Roller dirty or scratchy?	YES	Replace Fusing Unit (Fusing Roller).
3	Is Image Transfer Roller dirty or scratchy?	YES	Replace Image Transfer Roller.

22.4.11 Printer System: Low Image Density

<Typical Faulty Image>

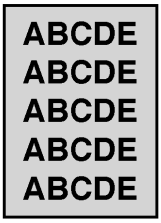


A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is paper damp?	YES	Replace paper for one just unwrapped.
2	Is there toner left in Toner Cartridge?	NO	Replace Toner Cartridge.
3	Is PC Drum faulty (life)?	YES	Replace Drum Cartridge.
4	Is developing bias faulty?	YES	Replace High Voltage Unit (HV1). Replace Controller/Mechanical Control Board (PWB-P).
5	Is image transfer faulty?	YES	Replace Image Transfer Roller.
			Replace High Voltage Unit (HV1).
			Replace Controller/Mechanical Control Board (PWB-P).

22.4.12 Printer System: Foggy Background

<Typical Faulty Image>



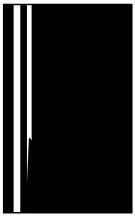
4011T004AA

A. Troubleshooting Procedures

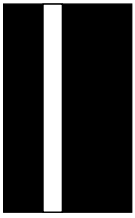
Step	Check	Result	Action
1	Is PC Drum scratchy?	YES	Replace Drum Cartridge.
2	Is developing bias contact terminal in good contact with the mating part?	NO	Clean contact terminal or check terminal position.
3	Is PH window dirty?	YES	Clean.
4	Is the problem eliminated after checks have been made up to step 3?	NO	Replace High Voltage Unit (HV1).
			Replace Controller/Mechanical Control Board (PWB-P).

22.4.13 Printer System: Blank Streaks or Bands

<Typical Faulty Images>



4011T015AA



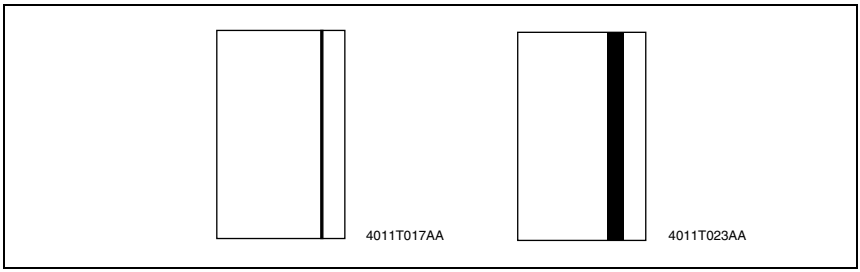
4011T020AA

A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is Image Transfer Roller dented, scratchy, or dirty?	YES	Replace Image Transfer Roller.
2	Is PC Drum scratchy or dirty?	YES	Replace Drum Cartridge.
3	Is Fusing Roller scratchy or dirty?	YES	Replace Fusing Unit (Fusing Roller).
4	Is PH window dirty?	YES	Clean.
5	Is the problem eliminated after checks have been made up to step 4?	NO	Replace Controller/Mechanical Control Board (PWB-P).

22.4.14 Printer System: Black Streaks or Bands

<Typical Faulty Images>

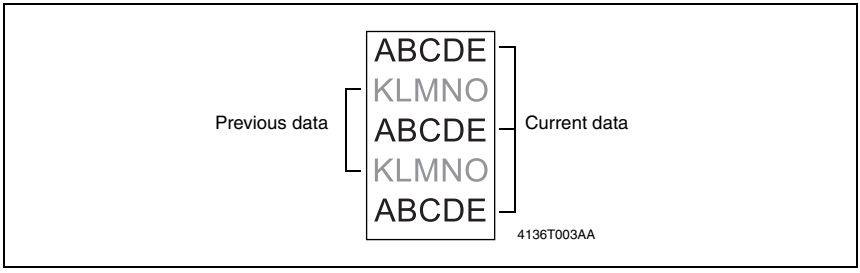


A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is paper path dirty with toner?	YES	Clean.
2	Is PC Drum scratchy or dirty?	YES	Replace Drum Cartridge.
3	Is Fusing Roller scratchy or dirty?	YES	Replace Fusing Unit (Fusing Roller).
4	Is the problem eliminated after checks have been made up to step 3?	NO	Replace Controller/Mechanical Control Board (PWB-P).

22.4.15 Printer System: Offset Image

<Typical Faulty Image>

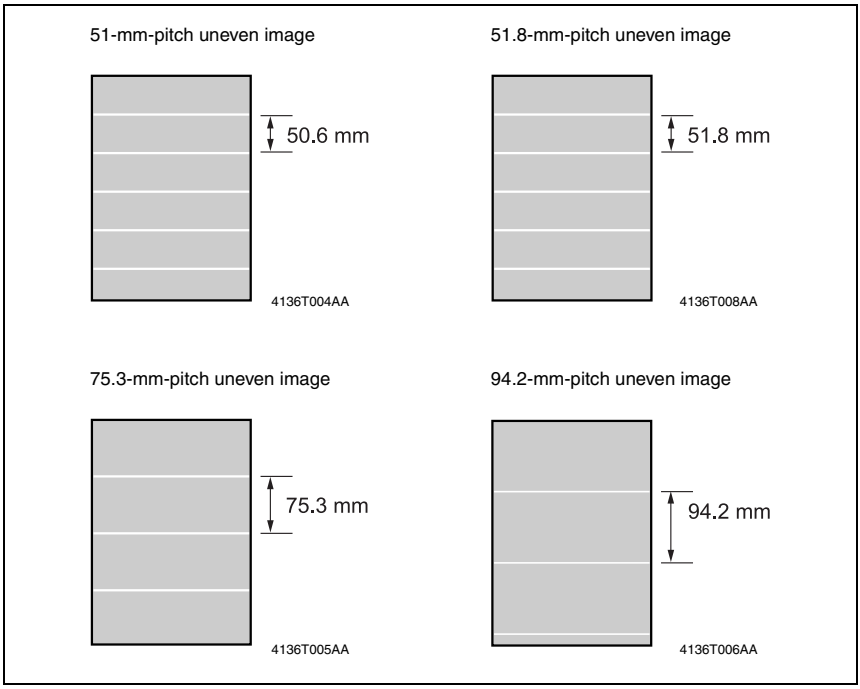


A. Troubleshooting Procedures

Step	Check	Result	Action
1	Is Fusing Roller faulty?	YES	Replace Fusing Unit (Fusing Roller).
2	Is Image Transfer Roller faulty?	YES	Replace Image Transfer Roller.

22.4.16 Printer System: Uneven Image

<Typical Faulty Images>

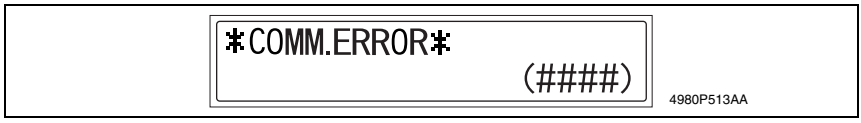


A. Troubleshooting Procedures

Step	Check	Cause	Result	Action
1	Is uneven image at a pitch of 50.6 mm?	Image Transfer Roller is scratchy or dirty.	YES	Replace Image Transfer Roller.
2	Is uneven image at a pitch of 51.8 mm?	Flexible Sleeve is scratchy or dirty.	YES	Replace Toner Cartridge.
3	Is uneven image at a pitch of 75.3 mm?	Fusing Roller/rt is scratchy or dirty.	YES	Replace Fusing Unit.
4	Is uneven image at a pitch of 94.2 mm?	PC Drum is scratchy or dirty.	YES	Replace Drum Cartridge.
		Fusing Roller is scratchy or dirty.	YES	Replace Fusing Unit.

23. FAX error (bizhub 160f/bizhub 161f only)

23.1 Communication Error



23.1.1 Outline

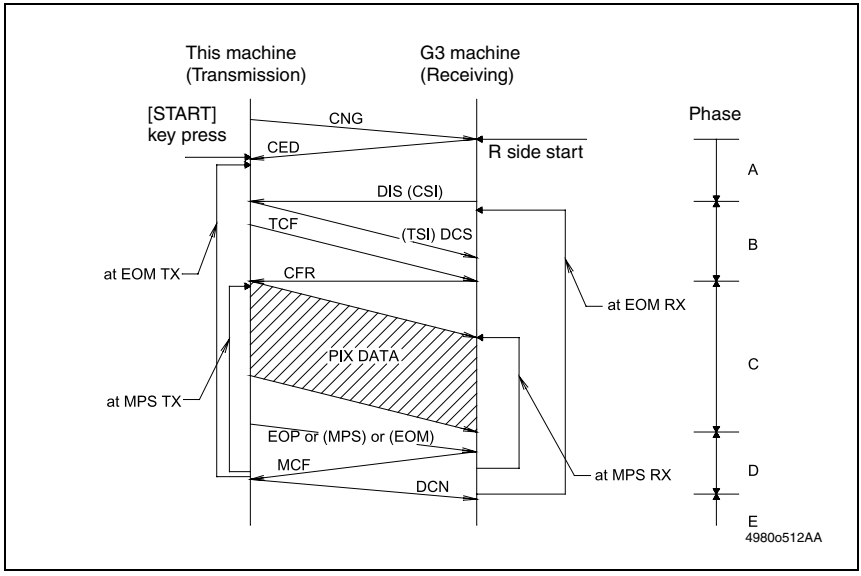
- Error caused by a problem of communication functioning. Five possible causes of errors are:

1. Communication is discontinued by a machine error.
2. Communication is discontinued by a machine trouble.
3. Communication is discontinued by an error occurring at the destination station.
4. Communication is discontinued by a protocol error.
5. ADF Error on trouble.

- When communication is discontinued due to item 3 or 4, transmission is retried. In other case, transmission is canceled without retry.

23.1.2 Error occurring during transmission

- The transmission error before “Phase-B” performs redial according to the redial interval of each country and the number of times.
  The transmission error after “Phase-C” performs redial only one time. Transmission is canceled when an error occurs again. (can change in Soft SW)
  When an error occurs by ADF TX, transmission is canceled without redial.



23.1.3 Error occurring during reception

- Reception is canceled.

23.2 Error Code

23.2.1 Reception

Code	Possible Causes of Error.
0001	No G3 signal received within 35 sec. in manual receive mode.
0003	Received DIS after sending DIS signal.
0004	Received DCN after sending DTC signal.
0006	Detect busy tone within receiving phase B.
0009	Can not receive any signal within 35 sec. in manual polling mode.
0010	Received DCN signal after sending DTC signal in polling RX.
0011	Can not receive any correct response after sending three DTC signals.
0012	Remote side Password does not match in polling RX/our side no file to be polled.
0013	Can not receive carrier signal within 6 sec. after sending CFR in data phase C.
0014	Can not receive T.30 signal after sending FTT signal.
0015	Line polarity change within receiving phase B~D.
0016	Receive DCN signal after sending FTT signal.
0017	Can not receive any response from remote side after sending type of xxx_EOM signal.
0018	Can not detect energy within 6 sec. after sending FTT command.
0019	Received DCN signal after sending CFR signal.
001A	No energy on line over 6 sec. within phase C before any corrected ECM frame.
001D	Detect FSK signal, but did not receive any command within 6 sec.
001E	In phase C, have detected FSK signal, but did not receive any command within 6 sec.
0020	Can not correct frame within 6 sec., or in non-ECM mode, one decoding line over 6 sec.
0021	Remote-side disconnect at phase C (V.17).
0022	Owing to noise interference on the line, receiving side can't receive correct data within specified time (no ECM).
0023	• Received “Remote monitoring password” error in RSD. ☞ “Utility mode/ Admin.management/ Remote monitor”. ☞ “Service mode/ Admin. registration.” • The Customer machine has updated the firmware now. • The Service Tech. Rep. updated remote machine firmware by RSD.
0024	• TX and RX machines both have different “machine ID (FAX model ID)” code in RSD. • The Customer machine has updated the firmware now. • The Service Tech. Rep. updated remote machine firmware by RSD
0025	• TX and RX machines have different “company ID (FAX machine maker ID)” code in RSD. • The Customer machine has updated the firmware now. • The Service Tech. Rep. updated remote machine firmware by RSD
0026	• Remote monitor level error. Remote side can’t access in RSD. • The Customer machine has updated the firmware now. • The Service Tech. Rep. updated remote machine firmware by RSD
0027	RSD connect failure due to user incorrect operation or machine error.
0029	Mailbox password not programmed or matched for mailbox receiving.
002A	Line Problem
0030	Did not receive any signal within 6 sec.at phase D.

Code	Possible Causes of Error.
0031	Received incorrect signal at phase D (not EOP, MPS, EOM, DCS PPS_Q, PPS_Q, etc.).
0032	Did not receive carrier signal within 6 sec.after sending MCF. or RTP, RTN signal.
0033	Received DCN signal at phase D within pages (not last page).
0039	In non-ECM mode, when machine already received the data but next line data doesn't receive within 13.1 seconds.
003F	Remote side TSI not programmed in machine one touch or speed dial directory.
0040	Did not receive carrier signal within 6 sec. after sending CTR.
0041	Did not receive carrier signal within 6 sec. after sending PPR.
0042	Did not receive correct signal after sending RNR signal.
0043	Received incorrect signal at phase D in ECM mode.
0044	Did not receive carrier signal /FSK signal within 6 sec. after sending MCF in ECM mode.
0045	Did not receive any correct signal after sending RNR response with ERR signal.
0046	Receive incorrect signal when sending RNR response with ERR signal.
0047	Did not receive correct signal after sending ERR signal.
0048	Did not receive correct signal after receiving PPS_PRI_Q or PRI_Q, EOR_PRI_Q.
0049	Did not receive correct signal after sending PIP/PIN signal within 13 sec.
004A	Line energy over threshold lasts for 60 seconds after MCF and can not detect FSK or carrier signal in ECM mode.
004B	Can not detect correct FSK signal even though detected FSK tone within 6 sec.
004C	Command hand shake fail when V.34 RX.
004E	Receive DCN signal after sending DIS in V.34.
004F	Remote side disconnected after sending ANSam in V.8 phase.
0050	Did not receive any correct signal after sending CJ signal in V.8 phase.
0051	Did not receive phase C signal after phase B within 20 seconds in V.34.
0052	Did not receive phase D signal after phase C within 20 seconds in V.34.
0053	Modem disconnect after phase D in V.34.
0054	Remote side disconnected after phase D in V.8.
0055	Receive incorrect signal after sending DIS signal in V.34.
0056	Modem disconnect after sending CFR in V.34.
0057	Did not detect image signal within 6 seconds after sending CFR.
0058	Did not detect image signal within 6 seconds after modem enter to phase A in V.34.
0059	Relay box is not registered even when Relay job has been received.
005A	Modem can not detect any correct ECM frame within 3 minutes in phase C.
005B	Did not detect phase E signal after primary channel within 6 seconds.
005C	Detect busy tone within control channel after phase C.
005D	Remote-side disconnect at phase C (V.34).
005E	Did not detect control channel signal after received RCP frame within 6 seconds.
005F	Did not detect silence after sending JM signal for polling TX function.
0060	There are no bulletin files to be polled in V.34.
0061	Machine can not detect V.21 or V.8 signal within 35 seconds.
0062	Modem disconnect in phase D after our side sending out flag sequence in control channel.
0063	Did not receive any flag sequence in control channel within 6 seconds in phase D.

Code	Possible Causes of Error.
0064	Did not detect any control channel signal in phase D within 60 seconds even though energy still on the line.
0065	Did not detect any control channel signal within 60 seconds after detect silence in phase D.
0066	Did not receive T.30 signal or carrier signal after sending CFR in V.34.
0070	User presses stop key during receiving.
0071	Memory full during receiving.

23.2.2 Transmission

Code	Possible Causes of Error.
0080	Did not detect any G3 signal within 35 sec. specified by ITU-T in phase B.
0081	Received DTC signal in transmission phase.
0082	Transmitting unit receives a signal other than DIS or DTC. and DCN in phase B.
0083	Detected FSK signal, but did not receive any signal within 35 seconds.
0084	Detect DCN signal in phase B.
0085	Transmitting unit sending DCS 3 times consecutively, but each time receiver responds with DIS/DTC.
0086	Detected response signal other than DTC, DIS, FTT, DCN or CFR after sending DCS.
0087	Training attempt has failed because speed unit cannot adjust to low lower speed.
0088	Received DCN signal after sending out DCS signal.
0089	Remote side no mailbox function or not compatible.
008A	Remote side not enough memory for relay initiate.
008B	Receiver's protocol of DIS is received, but it is not compatible with our machine.
008C	Remote side not enough memory for relay initiate.
008D	Receiver's protocol of DIS is received, but remote side can't receive document temporary, may be run out of paper or other reason.
008E	Remote side CSI number not defined in machine one touch or speed dial directory.
008F	Modem not ready to receive V.34 data during 6 seconds after receiving CFR signal.
0090	Called side document not ready for our polling.
0091	Sending out DCS+TCF signal 3 times consecutively but no signal in response from receiver.
0092	Remote side disconnected during transmitting phase.
0093	Received DCN signal after sending out DCS signal for V.34.
0094	It is over 4 minutes to TX a ECM block (64K).
0095	Wrong ID number when Polling RX or Mail Box TX.
0099	Remote side disconnect after primary channel.
009A	Did not detect any signal after sending CI signal.
009C	Received DCN after sending DTC in V.34 polling RX.
009D	Remote side hang up before V.34 modem enters phase B state in V.34 polling RX.
009F	Did not receive any response from other side after sending PPS_EOM signal.
00A0	User stops or cancels transmission job.
00A1	Document JAM during transmission.
00AE	Did not finish V.8 procedure or detect V.21 signal after CM signal within 30 seconds.
00AF	Modem can not enter into control channel after TX side sends out RCP signal for V.34.
00B0	Did not receive any command after our side retry three DCS signal in V.34 TX.

Code	Possible Causes of Error.
00B1	Did not finish V.8 procedure or detect V.21 signal after ANSam signal within 35 seconds.
00B2	Did not detect phase B signal after our side sending CJ signal within 30 seconds.
00B3	Did not detect correct V.21 or JM signal after sending CM signal.
00B4	Did not detect correct phase B signal within 25 second after CM/JM signal exchange.
00B5	Did not detect phase C signal after phase B within 25 seconds.
00B6	Did not detect phase D signal within 25 seconds after CM/JM exchange.
00B7	Did not detect phase E signal after phase D within 30 seconds.
00B8	Remote side disconnect after our side sent DCS signal in V.34.
00B9	Receive T.30 signal other than DIS,DCS,CFR after sending DCS signal in V.34.
00BA	Did not receive correct signal after our side sent DTC signal in V.34.
00BB	Every time our side received DIS signal after sending DTC in V.34.
00BC	Modem not ready within 10 second after entering primary channel in V.34.
00BD	Can not detect correct V.21 or JM signal after detected FSK frequency.
00BE	Remote side no document to be polled after V8 handshaking.
00BF	Capability not match after V8 handshaking.
00C0	Remote side disconnect before entering primary channel in V.34.
00C1	At phase-D, transmitting unit sends out EOP 3 times consecutively, but receives no answer from receiving unit.
00C2	Remote side disconnect after sending out V.8 CM signal.
00C4	After sending MPS signal, the received signal is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00C5	Received DCN signal after sending MPS signal.
00C9	At phase-D, sending MPS 3 times consecutively, but no answer from receiving unit.
00CA	After sending EOP signal, the received signal is not one of MCF, RTN, PIP, PIN, PRI-EOP, DCN.
00CB	After sending EOP signal, the received signal is DCN signal.
00CC	After sending EOM signal, the received signal is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00CD	At phase-D, transmitting unit sends out EOM 3 times consecutively, but receives no answer.
00CE	At phase-D, transmitting unit sends out EOM, but receives DCN.
00CF	Received incorrect signal after sending DTC signal for V.34 polling.
00D0	Received ERR signal after sending EOR_NULL.
00D1	ECM TX received wrong command in phase D after PPS-EOP. (not PPR, MCF, PIP, PIN,.....).
00D2	Receive DCN after send command PPS-EOP signal.
00D3	Received DCN after sending PPS_NULL signal.
00D4	Received DCN after sending PPS_EOM signal.
00D8	Did not detect correct phase C signal for polling within 25 seconds.
00D9	Did not detect correct phase C signal after detecting silence after phase B.
00DA	Did not detect phase D signal within 30 seconds or remote side hang up over 6 seconds.
00DB	Did not receive any T.30 signal within 15 seconds in phase D.
00DC	Received T.30 signal in phase D other than DCS,DIS or DTC.
00DD	Remote side not the same model or no mailbox ID defined for mailbox TX.
00DE	Remote side no SUB capability in V.34.

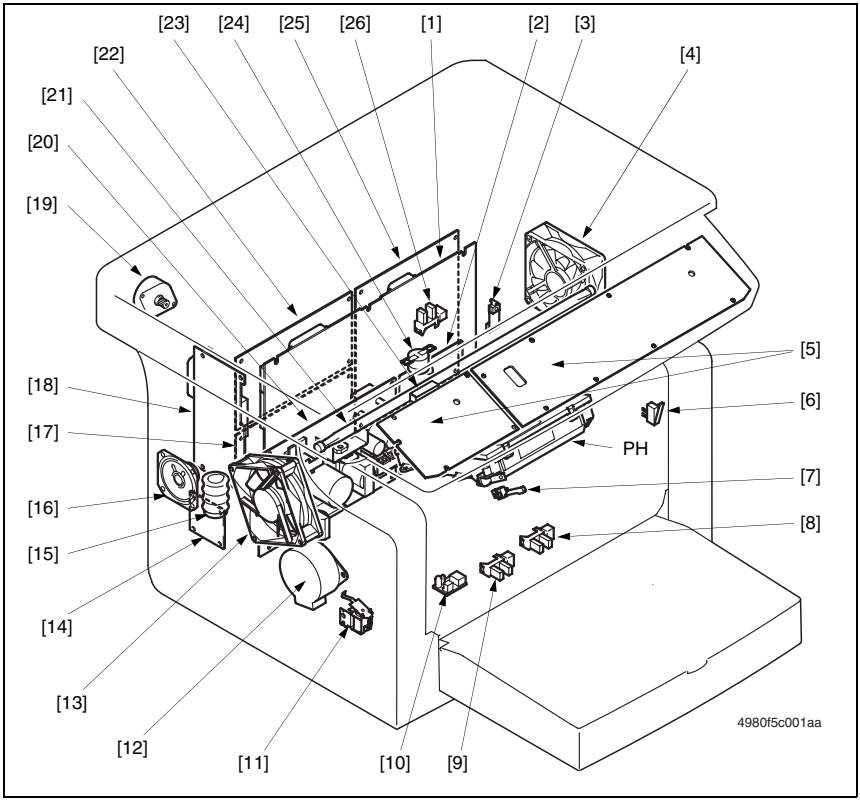
Code	Possible Causes of Error.
00E0	At phase-D, transmitting unit sends out PPS_NULL 3 times consecutively but receives no answer.
00E1	Received incorrect response after sending PPS_NULL.
00E2	Did not receive any response in RR response procedure after sending PPS_NULL.
00E4	At phase-D, transmitting unit sends out PPS_MPS 3 times consecutively but no answer.
00E5	Received incorrect response after sending PPS_MPS.
00E6	Did not receive any response in RR response procedure after sending PPS_MPS.
00E7	Received DCN after sending PPS_MPS.
00E8	At phase-D, transmitting unit sends out PPS_EOP 3 times consecutively but no answer.
00E9	Receive PIN signal after sent last page three times.
00EA	Did not receive any response in RR response procedure after sending PPS_EOP.
00EB	At phase-D, transmitting unit sends out PPS_EOM 3 times consecutively but no answer.
00EC	Received incorrect response after sending PPS_EOM.
00ED	Did not receive any response in RR response procedure after sent out PPS_EOM.
00EE	At phase-D, transmitting unit sends out EOR_NULL 3 times consecutively but no answer.
00EF	Received incorrect response after sending EOR_NULL.
00F0	Did not receive any response procedure after sending EOR_NULL.
00F1	At phase-D, transmitting unit sends out EOR_MPS 3 times consecutively but no answer.
00F2	Received incorrect response after sending EOR_MPS.
00F3	Received ERR signal after sending EOR_MPS.
00F4	Did not receive any response in RR response procedure after sending EOR_MPS.
00F5	At phase-D, transmitting unit sends out EOR_EOP 3 times consecutively but no answer.
00F6	Received incorrect response after sending EOR_EOP.
00F7	After Received ERR, our side can not receive response after sending EOR_EOP command.
00F8	At phase-D, transmitting unit sends out EOR_EOM 3 times consecutively but no answer.
00F9	Received incorrect response after sending EOR_EOM.
00FA	Received ERR signal after sending EOR_EOM.
00FB	Did not receive any response in RR response procedure after sending EOR_EOM.
00FC	Did not receive any response after sending CTC.
00FD	Can't speed down to lower speed in ECM mode.
00FE	Memory full for transmission.
00FF	Redial all fail.

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Appendix

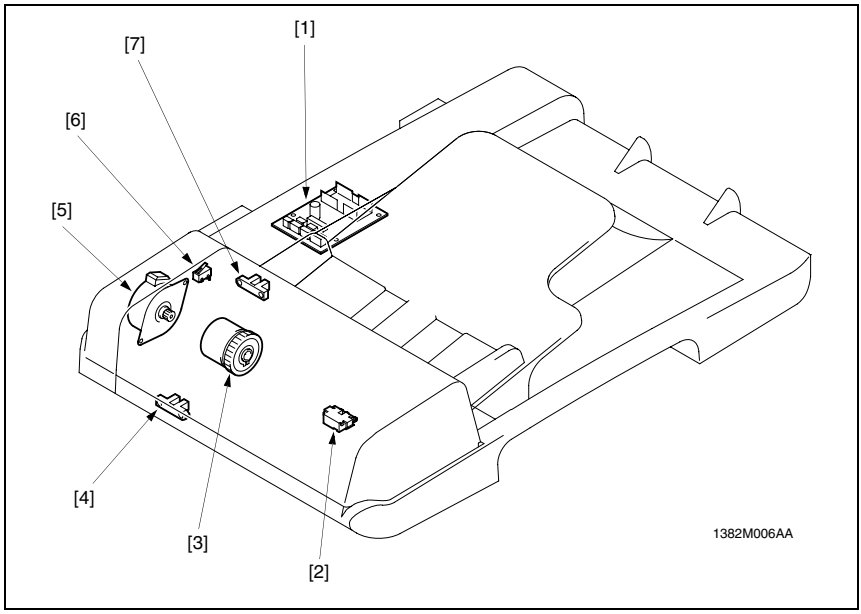
24. Parts layout drawing

24.1 Main Unit



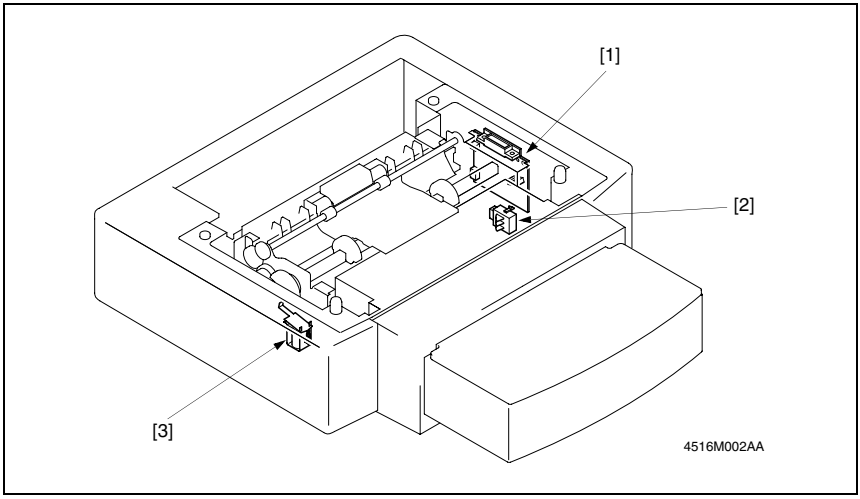
[1] Controller/Mechanical control Board (PWB-P)
[2] High Voltage Unit (HV1)
[3] Thermistor (TH1)
[4] Cooling Fan Motor 2 (M3)
[5] Control Panel (PWB-O)
[6] Front Door Switch (S2)
[7] Paper Take-Up Switch (S1)
[8] Multi purpose Tray Paper Empty Sensor (PE1)
[9] Multiple Bypass Tray Paper Empty Sensor (PE2)
[10] Toner Empty detection sensor (TE1)
[11] Paper Take-Up Solenoid (SL1)
[12] Main Motor (M1)
[13] Cooling Fan Motor 1 (M2)
[14] Plat NIC Board (NIC-IF)
[15] Battery (BATT1)
[16] Speaker (SP1)
[17] NCU Board (PWB-NCU)
[18] Interface Board (PWB-IF)
[19] Scanner Motor (M4)
[20] Power Unit (PU1)
[21] Fusing Roller Heater Lamp (H1)
[22] Network Interface Card Board (PWB-NIC)
[23] Original Cover set sensor (PS2)
[24] Thermostat (TS1)
[25] PCL Board (PWB-PCL)
[26] Exit Sensor (PS1)

24.2 DF-501 (Option)



[1] Control Board (PWB-A DF)
[2] Paper take-Up Sensor (PC2-DF)
[3] Paper take-Up clutch (CL1-DF)
[4] Leading Edge Detection Sensor (PC3-DF)
[5] Main Motor (M5-DF)
[6] DF door set switch (S3-DF)
[7] Original detection Sensor (PC1-DF)

24.3 PF-501 (Option)



[1] 2nd Drawer Control Board (PWB-A PF)
[2] Cassette type Detecting Switch (SW1-PF)
[3] 2nd Drawer Take-up solenoid (SL2-PF)

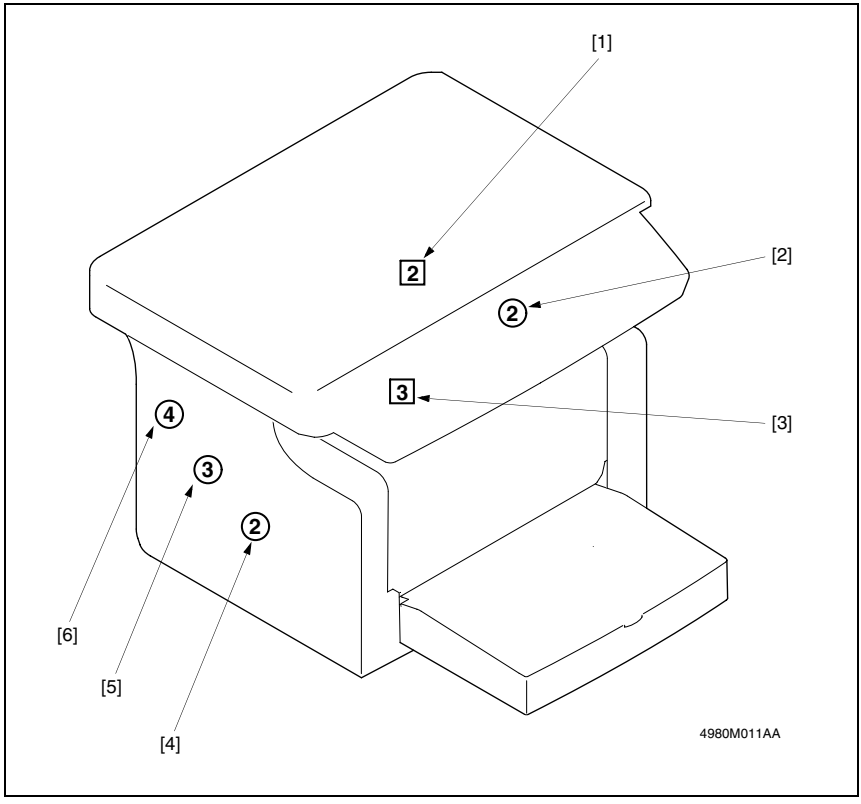
25. Connector layout drawing

Description

Number of Pin → ① Possible to confirm by removing external cover.

→ 1 Not possible to confirm by removing external cover.

25.1 Main Unit



No.	CN No.		Location	No.	CN No.		Location
[1]	CN3	2P	C-7	[4]	CN2	2P	C-7
[2]	CN7	2P	C-9	[5]	CN6	3P	C-8
[3]	CN8	3P	C-9	[6]	CN5	4P	C-6

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

DF-501

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2005.04
KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

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After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, show △1 to the left of the revised section.
  A number within △1 represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲1 in the lower outside section of the corresponding page.
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  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

2005/04	1.0	—	Issue of the first edition
Date	Service manual Ver.	Revision mark	Descriptions of revision

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General

1. Product specification

Name	Automatic Document Feeder
Installation method	Inserted at upper-rear side of main unit
Original type	Plain paper: 35 to 128 g/m^2 (9 to 34 lb.)
Detectable Original sizes	A5, B5, A4, 8.5 × 14 (Legal), 8.5 × 11 (Letter), 5.5 × 8.5 (Invoice), Custom size width: 138 to 216 mm; length: 130 to 356 mm
Paper capacity	Maximum 50 sheets (80 g/m^2) (21 lb)
Registration	Center
Original loading orientation	Face up
Productivity	12 sheets/minute (with plain A4 or Letter paper)
Original feeding Mode	Standard mode
Power source	DC 24 V, DC 5 V (supplied by main unit)
Power consumption	Less than 30 W
Dimension	W: 497 mm × D: 355 mm × H: 80 mm (W: 19.5 inch × D: 14 inch × H: 3.25 inch)
Weight	3.2 kg (7 lb)
Operating environment	Same as the copier

Original types	Possible problems
Originals bound with staples or paper clips	Incorrect paper take-up, damaged originals or drive malfunctions due to jammed paper clips
Originals bound with glue	Incorrect paper take-up or damaged originals
Folded, torn or extremely wrinkled originals	Incorrect paper take-up or damaged originals
Curled originals (more than 10 mm from front edge)	Paper misfeeds due to folded or skewed originals

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Maintenance

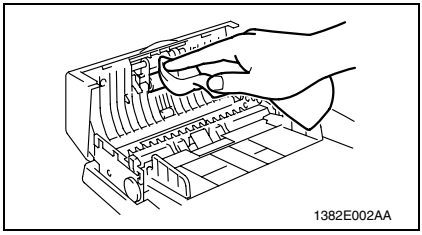
2. Periodical check

2.1 Maintenance procedure

2.1.1 Feed Roller

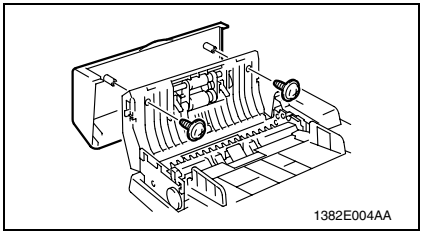
A. Cleaning of the Feed Roller

1. Open the Document Feeder Cover.

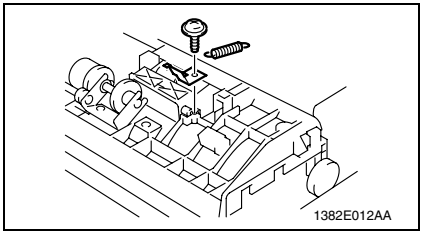


2. Using a soft cloth, wipe clean the surface of the Feed Roller.

B. Replacement of the Feed Roller



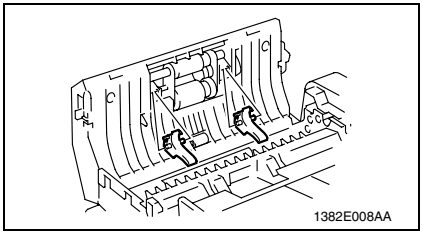
1. Open the Document Feeder Cover.
2. Remove the two screws, and then remove the Document Feeder Cover.



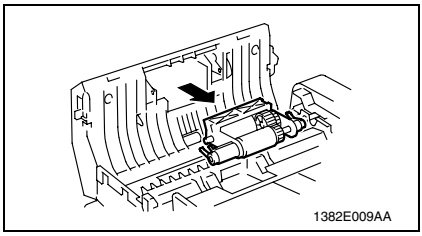
3. Remove the screw, and then remove the mounting plate and spring.

NOTE

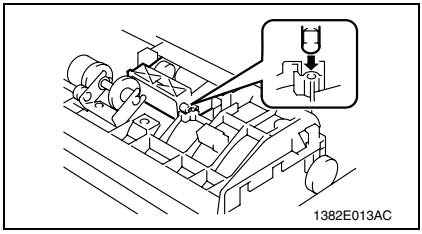
- **Be extremely careful not to lose the spring.**



4. Remove the two Document Stoppers.

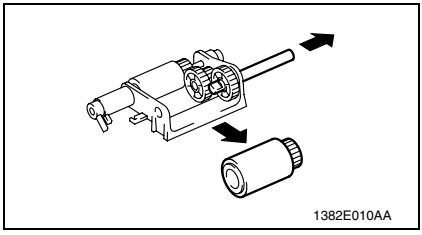


5. Remove the Pick-Up Roller/Feed Roller Assy.



NOTE

- **When installing the Pick-Up Roller/ Feed Roller Assy., make sure that the notch in the shaft of the Feed Roller is positioned on the top.**

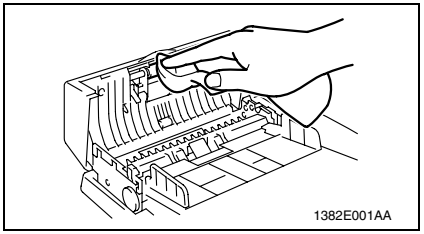


6. Remove the Feed Roller.

2.1.2 Pick-Up Roller

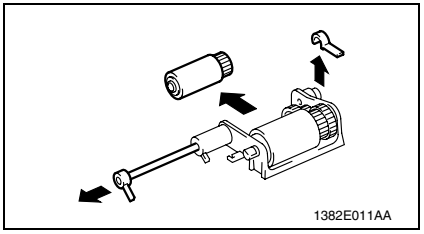
A. Cleaning of the Pick-Up Roller

1. Open the Document Feeder Cover.



2. Using a soft cloth, wipe clean the surface of the Pick-Up Roller.

2.1.3 Removal of the Pick-Up Roller

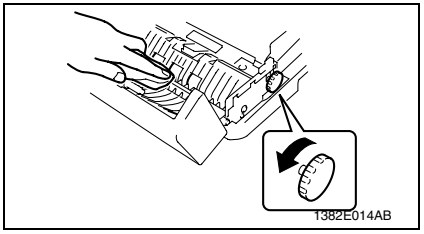


1. Remove the Pick-Up Roller/Feed Roller Assy.
2. Remove the Pick-Up Roller.

2.1.4 Registration Rollers

A. Cleaning of the Registration Rollers

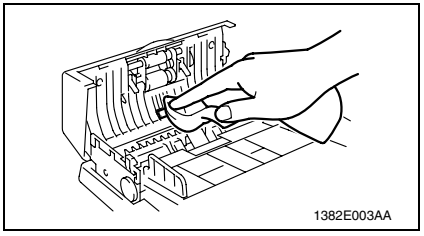
1. Open the Document Feeder Cover.



2. While turning the Document Feed Knob in the direction shown in the illustration, use a soft cloth to wipe clean the Registration Rollers.

B. Cleaning of the Transport Roller

1. Open the Document Feeder Cover.

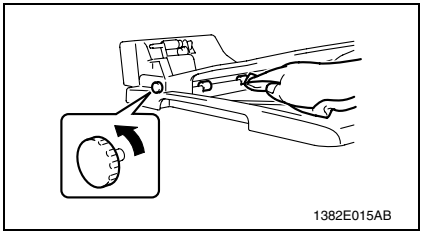


2. Using a soft cloth, wipe clean the surface of the Transport Roller.

2.1.5 Exit Roller

A. Cleaning of the Exit Roller

1. Open the Document Feeder Cover.

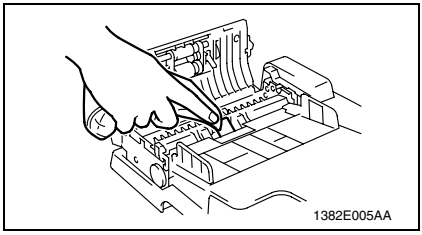


2. While turning the Document Feed Knob in the direction shown in the illustration, use a soft cloth to wipe clean the Exit Roller.

2.1.6 Paper Separation Pad

A. Cleaning of the Paper Separation Pad

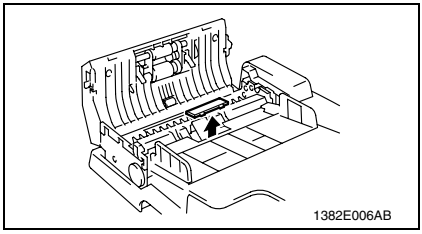
1. Open the Document Feeder Cover.



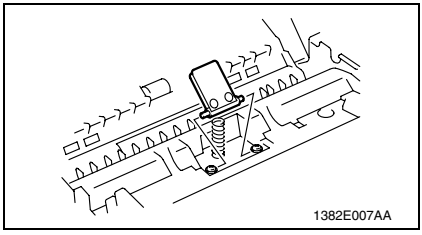
2. Using a soft cloth, wipe clean the surface of the Paper Separation Pad.

B. Removal of the Paper Separation Pad

1. Open the Document Feeder Cover.



2. Remove the Paper Separator Cover.



3. Loosen the two screws, and then remove the Paper Separation Pad.

NOTE

- **Be extremely careful not to lose the spring on the Paper Separation Pad.**

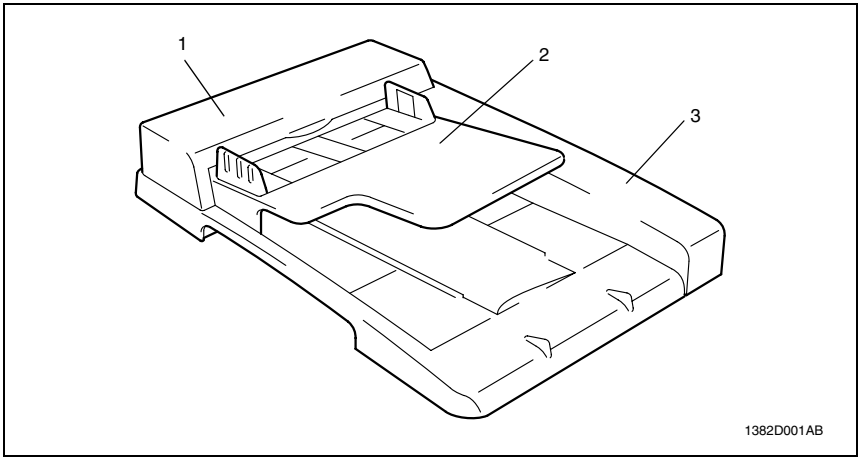
3. Other

3.1 Disassembly/Assembly list (Other Parts)

No	Section	Part name	Ref. page
1	External Parts	Document Feeder Cover	☞ 7
2		Document Feeder Tray	☞ 7
3		Rear Cover	☞ 7
4	Board	Control Board	☞ 8
5	Other	Main Motor	☞ 9

3.2 Disassembly/Assembly procedure

3.2.1 External Parts

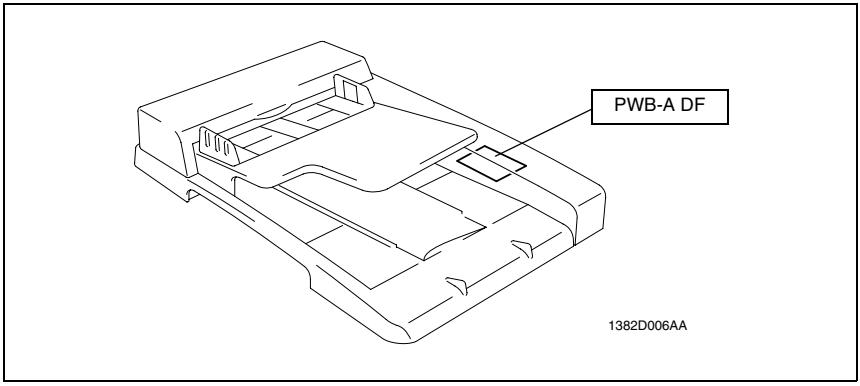


No.	Name	Removal Procedure
1	Document Feeder Cover	*1.* Open the Document Feeder Cover. *2.* Remove the two screws. *3.* Remove the Document Feeder Cover.
2	Document Feeder Tray	*1.* Open the Document Feeder Cover. *2.* Remove the Rear Cover. *3.* Remove the screw. *4.* Remove the Document Feed Knob. *5.* Remove the two screws. *6.* Remove the Document Feeder Tray.
3	Rear Cover	*1.* Remove the screw. *2.* Remove the Rear Cover.

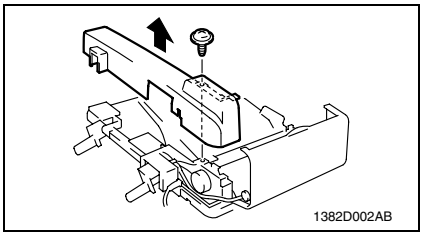
3.2.2 Control Board

NOTE

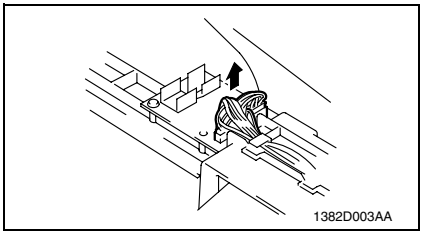
- **When removing a circuit board, refer to the precautions for handling printed circuit boards and follow the corresponding removal procedures.**
- **The following removal procedures omit the removal of the applicable component from connectors and circuit board supports.**
- **When it is necessary to touch ICs and other electrical components on the circuit board, be sure to first ground yourself.**



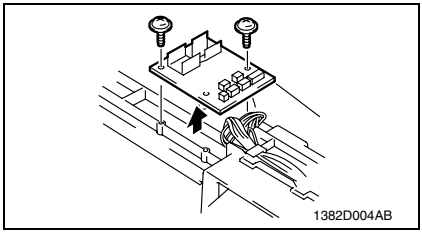
A. Removal of the Control Board



1. Remove the screw, unhook the six tabs, and then remove the Rear Cover.



2. Unplug all connectors connected to the circuit board.

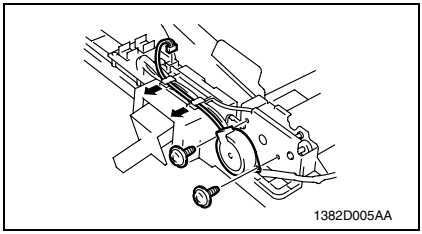


3. Remove the two screws, and then remove the Automatic Document Feeder Control Board.

3.2.3 Main Motor

A. Removal of the Main Motor

1. Remove the Rear Cover.



2. Unplug the connector on the Control Board.

3. Remove the two screws, and then remove the Main Motor.

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Adjustment/Setting

4. How to use the adjustment section

- "Adjustment/Setting" contains detailed information on the adjustment items and procedures for this machine.
- Throughout this "Adjustment/Setting," the default settings are indicated by " ".

A. Advance Checks

- Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

1. The power supply voltage meets the specifications.
2. The power supply is properly grounded.
3. The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
4. The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
5. The original has a problem that may cause a defective image.
6. The density is properly selected.
7. The Original Glass, slit glass, or related part is dirty.
8. Correct paper is being used for printing.
9. The units, parts, and supplies used for printing (developer, PC Drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
10. Toner is not running out.

B. Precautions for Service Jobs

1. To unplug the power cord of the machine before starting the service job procedures.
2. If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the Scanner Cables or gears of the Exposure Unit.
3. Special care should be used when handling the Fusing Unit which can be extremely hot.
4. The Developing Unit has a strong magnetic field. Keep watches and measuring instruments away from it.
5. Take care not to damage the PC Drum with a tool or similar device.
6. Do not touch IC pins with bare hands.

5. Service Mode

5.1 Accessing the Service Mode

1. Press the Utility key.
2. Press the following keys in order to enter the Service mode.
   Stop → 0 → 0 → Stop → 0 → 1

NOTE

- **Be sure to keep the access procedure for the Service mode from any unauthorized persons not involved with service operations.**

5.1.1 Accessing the "ADJUST" Menu

1. Enter the Service mode.
2. Press the ▲ or ▼ key to select the "ADJUST" menu.

5.1.2 Printing a Test Page

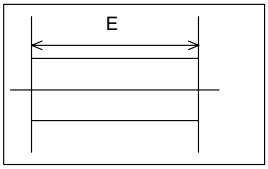
NOTE

- **Print a test page when making the following adjustments.**
- **Leading edge tilt adjustment**
- **Automatic Document Feeder sub-scanning zoom ratio adjustment**
- **Automatic Document Feeder main scanning & sub-scanning registration adjustments**

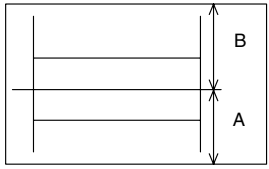
1. Enter the Service mode.
2. Press the ▲ or ▼ key to select the function.
3. Select "PRINT TEST PATTERN" → "TEST PATTERN 1".
4. Press the Start key to begin printing the test page.

5.2 ADJUST

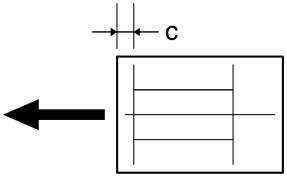
5.2.1 ADF SUB ZOOM

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction when using the Automatic Document Feeder.
Use	• When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced
Adjustment Specification	 1382D009AA • Adjust the length of E in the copy of the test pattern so that the following specification is met. Specifications 200 ± 0.5 % (Zoom Ratio = Full Size: 100 %) Setting Range 95 to 105 (1 increment = 0.4 %) The default setting is “100”
Adjustment Instruction	If the width of E in the test pattern is longer than the specified width. ..... Decrease the setting. If the width of E in the test pattern is shorter than the specified width. ..... Increase the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Load the test pattern into the Automatic Document Feeder and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray 1 to make the test copy.** *4.* If the length of E in the copy of the test pattern is not the same as the length of E in the test pattern, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Load the test pattern into the Automatic Document Feeder again, make another test copy, and check it.**

5.2.2 ADF MAIN REGIST

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction when using the Automatic Document Feeder.
Use	• After the ADF SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced
Adjustment Specification	 1382D011AA • After finishing the ADF SUB ZOOM adjustments. • Adjust the amount that widths A and B in the printed test pattern are shifted so that the following specification is met. Specifications 0 ± 2.0 mm Setting Range 90 to 110 (1 increment = 0.5 mm) The default setting is “100”
Adjustment Instruction	If the width of A is less than the width of B ..... Increase the setting. If the width of B is less than the width of A ..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Load the test pattern into the Automatic Document Feeder and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray 1 to make the test copy.** *4.* Fold the copy of the test pattern in half, and then check if the fold aligns with the centerline. If they are not aligned, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Load the test pattern into the Automatic Document Feeder again, make another test copy, and check it.**

5.2.3 ADF SUB REGIST

Functions	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction when using the Automatic Document Feeder.
Use	• After the PRN MAIN REGIST and PRN SUB REGIST and CCD SUB ZOOM adjustments have been performed • After the ADF SUB ZOOM adjustments have been performed • When the Upper Cover Assy. (Original Glass) has been replaced • When the ADF has been replaced
Adjustment Specification	 4007D051AA • After finishing the ADF SUB ZOOM adjustments. • Adjust the width of C in the printed test pattern so that the following specification is met. Specifications 20 ± 3.0 mm Setting Range 90 to 110 (1 increment = 0.5 mm) The default setting is “100”
Adjustment Instruction	If the width of C in the test pattern is longer than the specified width ..... Increase the setting. If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.
Adjustment Procedure	*1.* Print the test pattern. *2.* Enter the “ADJUST” menu in the Service mode. *3.* Load the test pattern into the Automatic Document Feeder and make a test copy. **NOTE** **• The test pattern should be positioned vertically.** **• Use A4 or Letter paper loaded into Tray 1 to make the test copy.** *4.* Check that the width of F in copy of the test pattern meets the specification. If the width of F is out of specification, adjust it according to the following procedure. *5.* Change the setting. If the shift cannot be adjusted to within the specification with a single adjustment, perform the adjustment again to change the setting. *6.* Press the Yes key to apply the setting. **NOTE** **• If the Stop key is pressed, instead of the Yes key, the main screen is displayed and the setting returns to that before it was changed.** **• Load the test pattern into the Automatic Document Feeder again, make another test copy, and check it.**

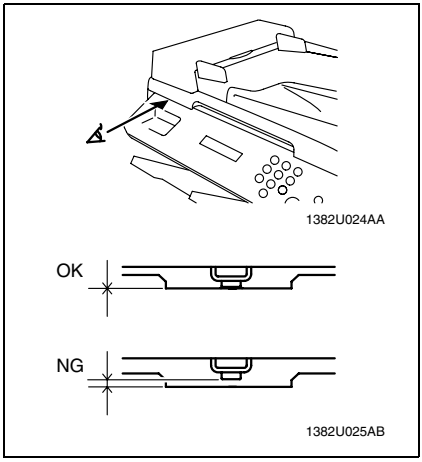
5.3 FUNCTION

5.3.1 ADF FEED TEST

Functions	• To check the paper feeding in the paper take-up/transport sections in the Automatic Document Feeder.
Use	• When a document misfeed occurs
Setting/Procedure	*1.* Load paper into the Automatic Document Feeder. *2.* Press the Start key to begin testing paper feeding. *3.* Press the Stop key to stop testing paper feeding.

6. Mechanical adjustment

6.1 Height Adjustment

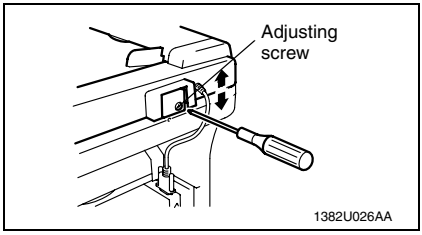


1. Check the gap between the Original Glass and the spacer on the Automatic Document Feeder.

NOTE

- **Be sure to open, then close the Automatic Document Feeder, and then check during pre-lighting of the scanner.**

2. If there is a gap, perform the adjustment described in step 3.

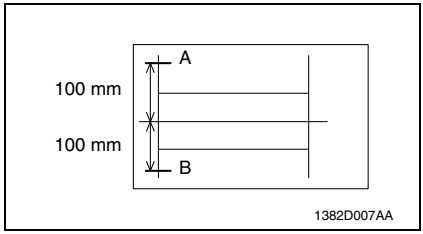


3. Turn the adjusting screw in the hinge of the Automatic Document Feeder until the spacer contacts the Original Glass.

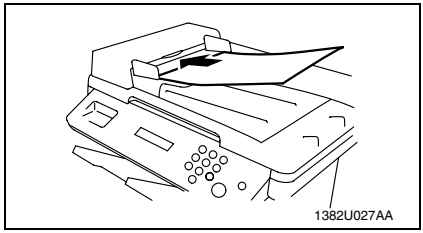
Screw rotation direction
Clockwise: Raises the Automatic Document Feeder.
Counterclockwise: Lowers the Automatic Document Feeder.

6.2 Leading Edge Tilt Adjustment

1. Print the test pattern.



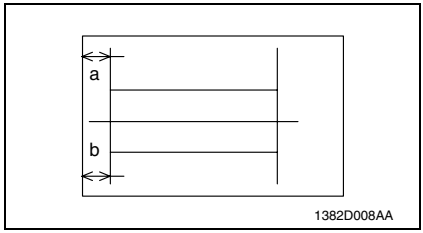
2. Draw lines 100 mm (A and B) from the center of the test pattern, as shown in the illustration.



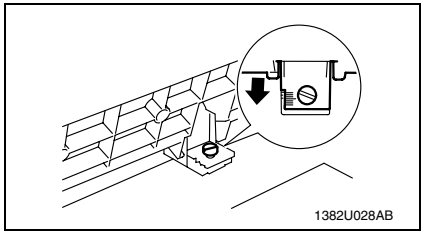
3. Load the test pattern into the Automatic Document Feeder, and then print five single-sided copies.

NOTE

- **The test pattern should be positioned vertically.**



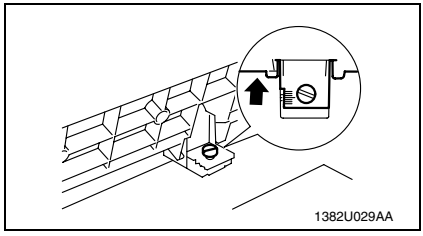
4. Measure the lengths a and b on the copies of the test pattern and, if there is a large shift, adjust it according to the following procedure. Standard values of a and b = ? 1.0 mm



<If A is longer than B>
Using a coin, loosen the shoulder screw shown in the illustration, and then slide the scale on the Automatic Document Feeder toward you.

NOTE

- **After finishing the adjustment, be sure to tighten the loosened shoulder screw.**



<If A is shorter than B>
Using a coin, loosen the shoulder screw shown in the illustration, and then slide the scale on the Automatic Document Feeder away from you.

NOTE

- **After finishing the adjustment, be sure to tighten the loosened shoulder screw.**

Troubleshooting

7. Paper Misfeed

7.1 Initial Check Items

- When a paper misfeed occurs in the printer, first make the following initial checks.

Check	Action
Does the paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	Replace paper. Instruct user in correct paper storage.
Is the paper transport path deformed, dirty, or obstructed with foreign matter?	Clean the paper path and replace if necessary.
Is the roller dirty, deformed, or worn?	Clean the roller and replace if necessary.
Are Edge Guides at correct position to accommodate paper?	Slide the Edge Guides up against the edges of the paper stack.
Does the actuator operate correctly when checked?	Correct or replace the actuator.

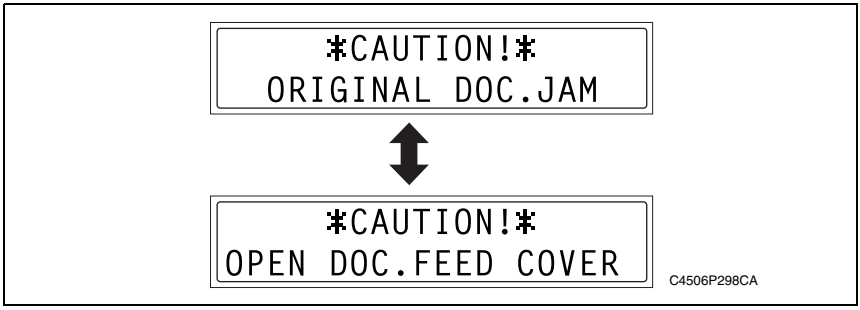
Precautions for Clearing Misfeed

- **Reset the misfeed condition by opening and closing the Front Door after the misfeed has been cleared.**

7.2 Paper Misfeed Displays

- The Error indicator lights up and a message appears in the display when a paper misfeed occurs.

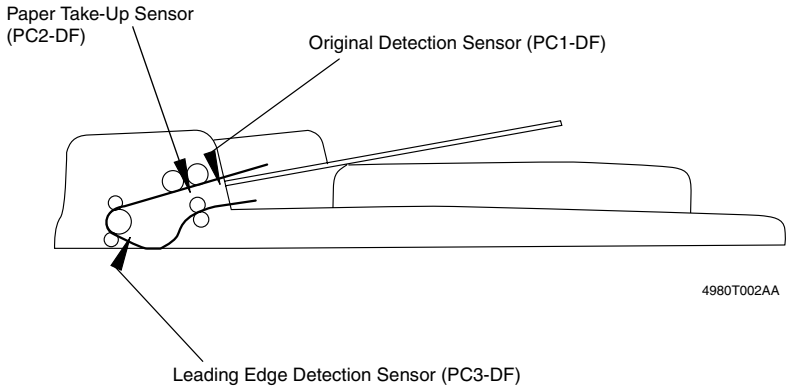
A. Automatic Document Feeder Misfeed



B. Procedure for canceling the misfeed display

1. Open the appropriate covers, remove the misfed paper and any remaining paper, and then close the covers.
2. Open, then close the Front Door.

7.3 Locations of Misfeed Detection Sensors



7.4 Misfeed Detection Timing and Troubleshooting Procedures

7.4.1 The Original misfeeds

A. Detection Timing

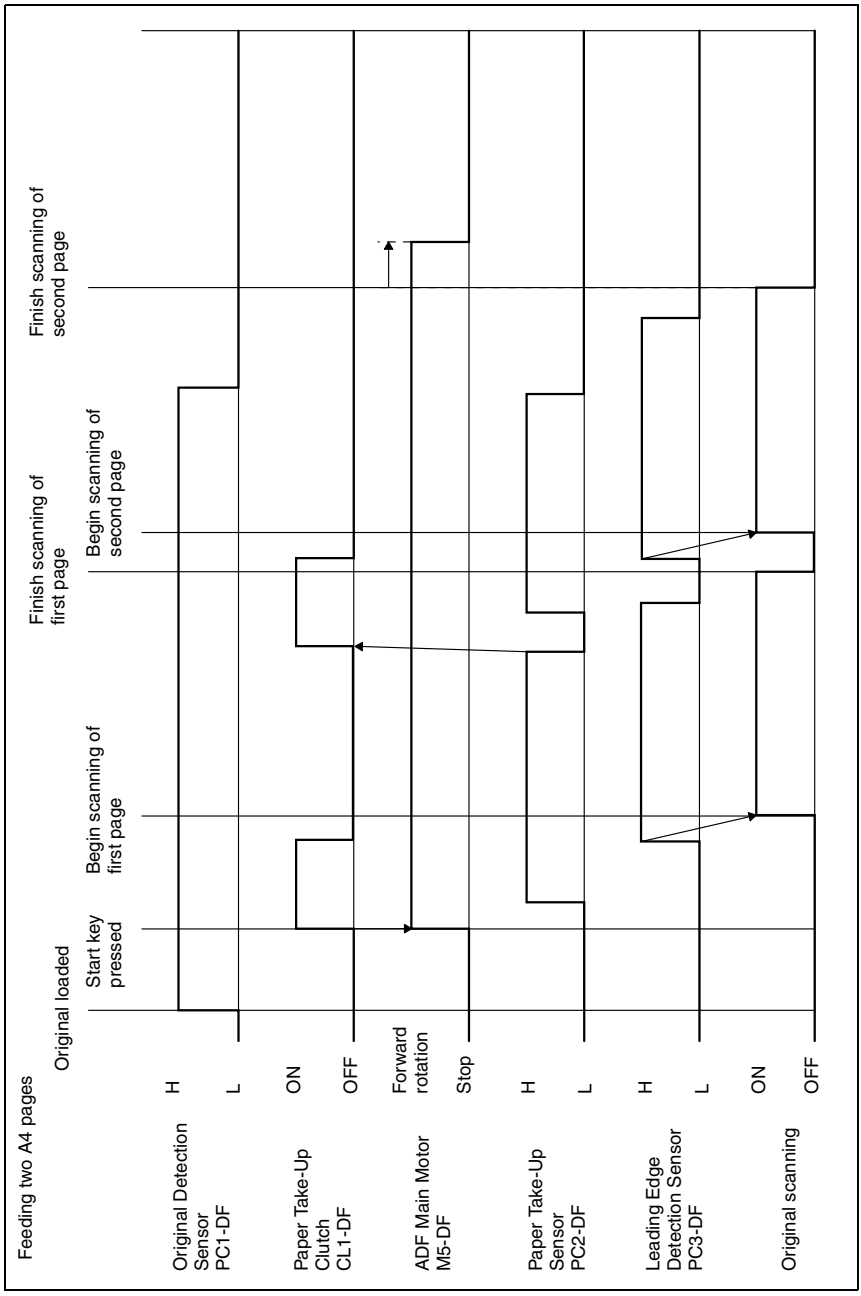
Type	Description
ADF Jam	• The Paper Take-Up Sensor is not unblocked after the predetermined period of time has elapsed after document feeding began. • The Paper Take-Up Sensor is not blocked after the predetermined period of time has elapsed after the Paper Take-Up Sensor is unblocked. • The Exit Sensor is not unblocked after the predetermined period of time has elapsed after the Paper Take-Up Sensor is unblocked. • The Exit Sensor is not blocked after the predetermined period of time has elapsed after the Paper Take-Up Sensor is blocked.
ADF remains paper jam	If all of the following conditions are met • The Automatic Document Feeder is in standby. • The Document Feeder Cover is closed. • The Original Detection Sensor is blocked. • Either the Paper Take-Up Sensor or the Leading Edge Detection Sensor or both sensors are blocked.

B. Troubleshooting Procedures

Relevant Electrical Parts	
Original Detection Sensor (PC1) Paper Take-Up Sensor (PC2) Leading Edge Detection Sensor (PC3)	Control Board (PWB-A DF)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial checks	–	–
2	PC1-DF sensor check	PWB-A DF PA02A DF-1	F-5
3	PC2-DF sensor check	PWB-A DF PA06A DF-1	F-4
4	PC3-DF sensor check	PWB-A DF PA03A DF-1	F-4
5	Replace PWB-A DF.	–	–

8. Timing Chart



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KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

PF-501

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      3.2.1 External Parts 4
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      3.2.3 2nd Drawer Paper Take-Up Unit 5
      3.2.4 Cassette Type Detecting Switch 6
      3.2.5 2nd Drawer Take-up Solenoid 6

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General

1. Product specification

Name	2nd Paper Feed Cassette
Type of paper	Plain and recycled paper: 60 to 90 g/m^2 (16 to 24 lb)
Media sizes	A4 and Letter
Paper capacity	Maximum 500 sheets (80 g/m^2) (21 lb)
Registration	Center
Power source	DC 24 V, DC 5 V (supplied by main unit)
Power consumption	Less than 7 W
Dimension	W: 401 mm × D: 615 mm × H: 138 mm (W: 15.75 inch × D: 24.25 inch × H: 5.5 inch)
Weight	4.3 kg (9.5 lb)
Environment	Same as the copier

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Maintenance

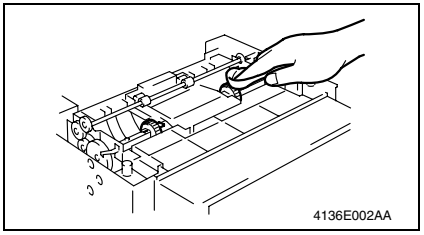
2. Periodical check

2.1 Maintenance procedure

2.1.1 Feed Roller

A. Cleaning of the Feed Roller

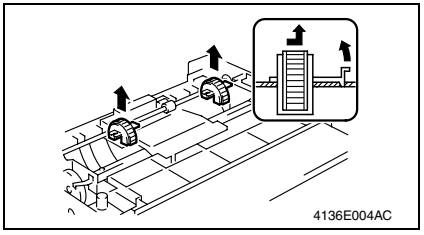
1. Raise the main unit to separate it from the Paper Feed Cassette.



2. Using a soft cloth, wipe clean the surface of the Feed Roller.

B. Replacement of the Feed Roller

1. Raise the main unit to separate it from the Paper Feed Cassette.



2. Remove the Feed Roller at the two points indicated.

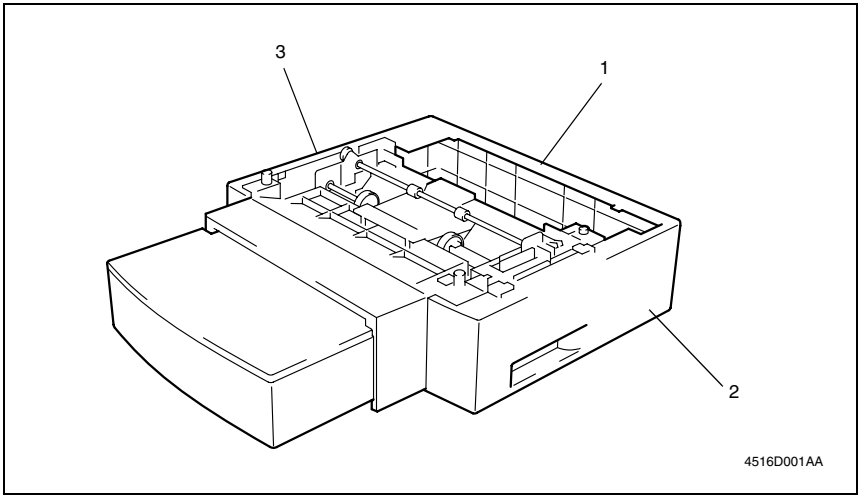
3. Other

3.1 Disassembly/Assembly list (Other parts)

No	Section	Part name	Ref. page
1	External Parts	Rear Cover	☞ 4
2		Right Cover	☞ 4
3		Left Cover	☞ 4
4	Board	2nd Drawer Control Board	☞ 5
5	Other	2nd Drawer Paper Take-Up Unit	☞ 5
6		Cassette Type Detecting Switch	☞ 6
7		2nd Drawer Take-up Solenoid	☞ 6

3.2 Disassembly/Assembly procedure

3.2.1 External Parts

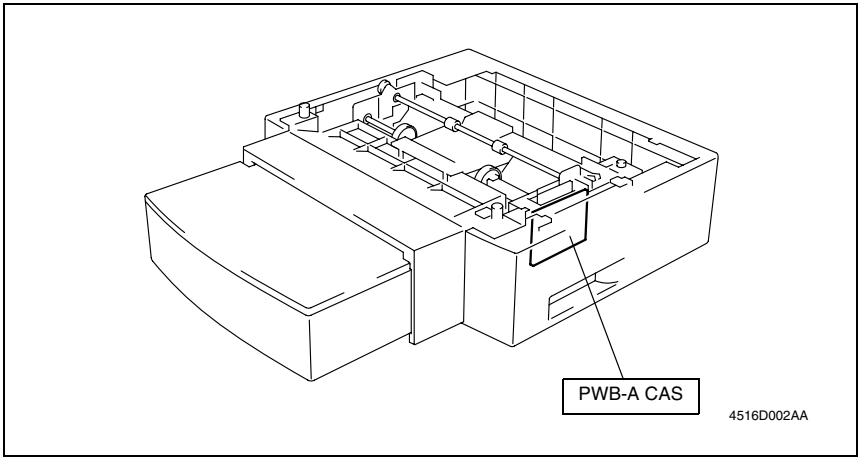


No.	Name	Removal Procedure
1	Rear Cover	*1.* Remove the four screws. *2.* Remove the Rear Cover.
2	Right Cover	*1.* Remove the Rear Cover. *2.* Remove the two screws. *3.* Remove the Right Cover.
3	Left Cover	*1.* Remove the Rear Cover. *2.* Remove the two screws. *3.* Remove the Left Cover.

3.2.2 2nd Drawer Control Board

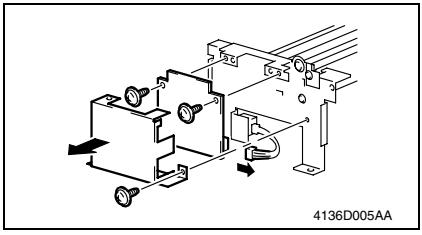
NOTE

- **When removing a circuit board, refer to the precautions for handling printed circuit boards and follow the corresponding removal procedures.**
- **The following removal procedures omit the removal of the applicable component from connectors and circuit board supports.**
- **When it is necessary to touch ICs and other electrical components on the circuit board, be sure to first ground yourself.**



A. Removal of the 2nd Drawer Control Board

1. Remove the 2nd Paper Take-Up Unit.

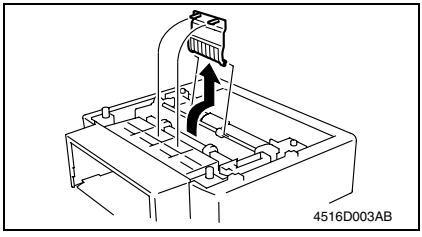


2. Remove the screw, and then remove the cover.
3. Remove the two screws, unplug the connector, and then remove the 2nd Drawer Control Board.

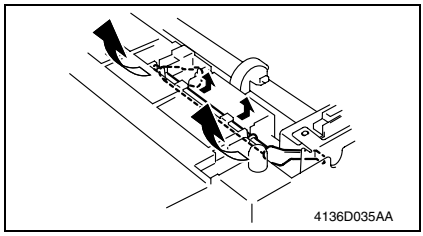
3.2.3 2nd Drawer Paper Take-Up Unit

A. Removal of the 2nd Drawer Paper Take-Up Unit

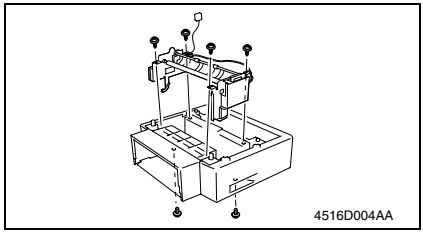
1. Raise the main unit to separate it from the Paper Feed Cassette.



2. Unhook the two tabs, and then remove the cover.



3. Remove the actuator.

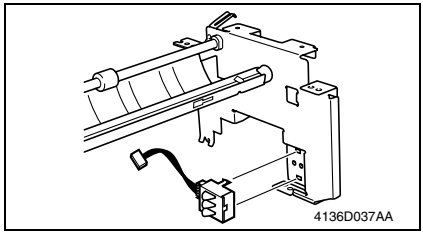


4. Remove the six screws, unplug the two connectors, and then remove the 2nd Drawer Paper Take-Up Unit.

3.2.4 Cassette Type Detecting Switch

A. Removal of the Cassette Type Detecting Switch

1. Remove the 2nd Drawer Paper Take-Up Unit.

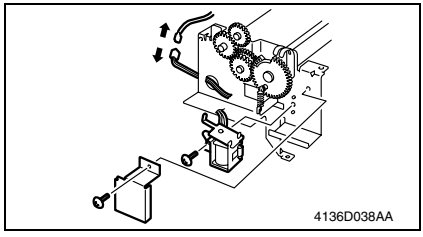


2. Unplug the connector, and then remove the Cassette Type Detecting Switch.

3.2.5 2nd Drawer Take-up Solenoid

A. Removal of the 2nd Drawer Take-up Solenoid

1. Remove the 2nd Drawer Paper Take-Up Unit.



2. Remove the screw, and then remove the cover.
3. Remove the screw, and then unplug the connector.
4. Remove the 2nd Drawer Take-up Solenoid.

KONICA MINOLTA

SERVICE MANUAL FIELD SERVICE

NC-501/SU-502

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     - 4.4.5 PageScope Web Connection 13
   - 4.5 List of Communication Error Codes 15

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General

1. Product specifications

Name	Network Interface Card (NC-501)
Interface	Ethernet 10/100Base T /TX (RJ-45)
TCP/IP Service	ARP, BootP, DHCP, IPP, lpr/lpd, Raw Socket, HTTPd1.1, SLP, AutoIP
Netware Services	Bindery, NDS, PServer mode, NPrinter mode, NDPS Frame Type (802.3, 802.2, 802.3 SNAP, Ethernet-II, Auto Detect)

Name	Internet Fax & Network Scan Kit (SU-502)
Interface	Ethernet 10/100Base T /TX (RJ-45)
Data format	MIME, Base64
Content Type	Multi-part/Mixed (text/plain, image/tiff)
I-FAX Communication Protocol	TX: SMTP RX: POP3
I-FAX Data Format	E-Mail Format: MIME Attached File format: Transmission: TIFF-S Reception: TIFF-F
I-FAX Cording method	Transmission: MH Reception: MH, MR, MMR, JBIG
I-FAX TX resolution	204 dpi × 98 dpi (STD) 204 dpi × 196 dpi (FINE)
I-FAX RX resolution	204 dpi × 98 dpi 204 dpi × 196 dpi 204 dpi × 391 dpi 200 dpi × 100 dpi 200 dpi × 200 dpi
Scan to E-Mail / Scan to FTP Communication Protocol	E-Mail TX: SMTP FTP TX: FTP
Scan to E-Mail / Scan to FTP Data Format	E-Mail Format: MIME Attached File format: TIFF, PDF
Scan to E-Mail / Scan to FTP Cording method	MH, MR, MMR, JPEG (For Color and Gray mode, fixed at JPEG)
Scan to E-Mail / Scan to FTP resolution	150 dpi × 150 dpi 300 dpi × 300 dpi 600 dpi × 600 dpi

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Maintenance

2. Other

2.1 Disassembly/Assembly list (Other parts)

No	Section	Option	Part name	Ref. page
1	Board	NC-501	Network Interface Card (PWB-NIC)	☞ 3
2			Plate NIC Board (NIC-IF)	☞ 4
3		SU-502	Internet Fax & Network Scan Kit	☞ 5

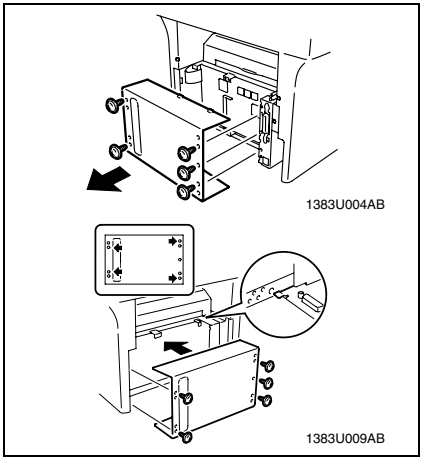
2.2 Disassembly/Assembly procedure

NOTE

- **When removing a circuit board, refer to the precautions for handling printed circuit boards and follow the corresponding removal procedures.**
- **The following removal procedures omit the removal of the applicable component from connectors and circuit board supports.**
- **When it is necessary to touch ICs and other electrical components on the circuit board, be sure to first ground yourself.**

2.2.1 Network Interface Card (NC-501)

A. Removal of the Network Interface Card

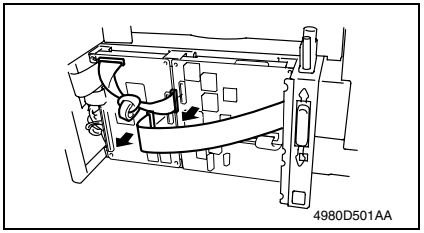


1. Turn OFF the Power Switch and unplug the power cord from the power outlet.
2. Remove the Rear Cover. (5 screws)

NOTE

Use the following precautions when installing the Rear Cover.

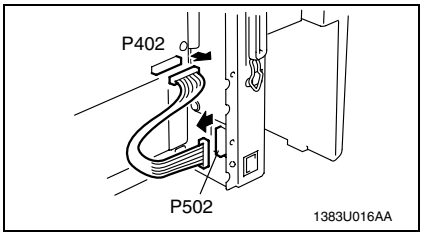
- **Make sure that the cover is positively placed inside the guide (Top and bottom).**
- **Make sure that the cover is properly doweled into the frame.**



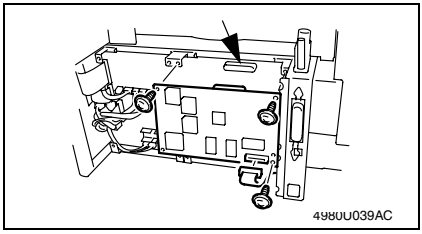
3. Disconnect hookup connector P303 of the PCL Board.
4. Disconnect hookup connector P401 of the Net work Interface Card.

NOTE

Applicable to the Copier (PCL) and Fax (PCL) machine only.



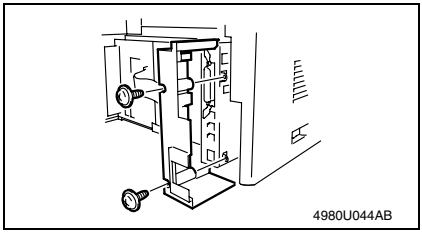
5. Disconnect hookup connector P402 of the Network Interface Card.
6. Disconnect hookup connector P502 of the Plate NIC Board.



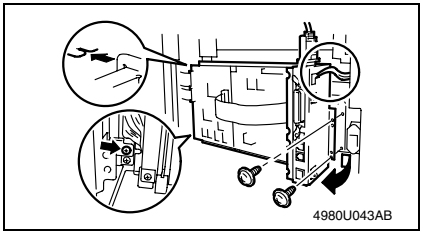
7. Remove the four screw, and the Network Interface Card (unplug the hookup connector provided on the backside of the Network I/F Card).

2.2.2 Plate NIC Board (NC-501)

A. Removal of the Plate NIC Board



1. Remove the Rear Right Cover. (2 screws)

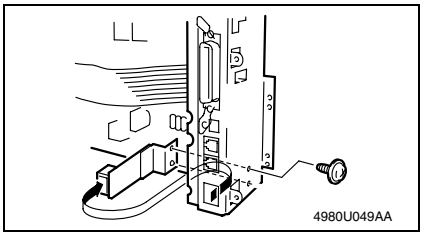


2. Loosen one screw at the lower left corner of the PWB mounting bracket and remove the two fixing screws on the right.
3. Slide out the PWB mounting bracket in the direction of the arrow.

NOTE

Use the following precautions when installing the PWB mounting bracket.

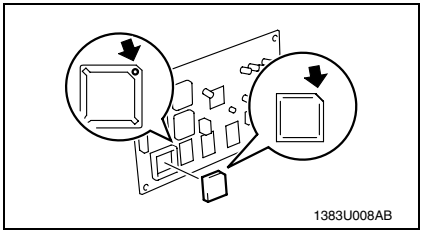
- **Fit the upper left corner of the PWB mounting bracket into the cutout in the copier.**
- **When installing the PWB mounting bracket in position, use care not to allow the harness to be wedged in mechanisms (shown inside a circle).**



4. Remove the one screw, and the Plate NIC Board.

2.2.3 Internet Fax & Network Scan Kit (SU-502)

A. Removal of the Internet Fax & Network Scan Kit



1. Remove the Internet Fax & Network Scan Kit from IC socket BC31 of the Network Interface Card.

NOTE
Use the following precautions when installing the Internet Fax & Network Scan Kit.

- **Before installing the Internet Fax & Network Scan Kit, first remove the Network Interface Card from the copier.**
- **During installation, align the round portion on the IC socket with the cutoff corner of the Internet Fax & Network Scan Kit.**

3. Firmware upgrade

1. Connect the Network Interface Card and PC with the network by using the RJ45 network cables.
2. Start up the [MS-DOS prompt] or [Command prompt] of PC.
3. Input "ftp", and then input the [IP address].
   C:\>ftp XXX.XXX.XXX.XXX

NOTE
Confirm with the user's system administrator or network administrator on the IP address.

4. Press the "Enter" key.
5. Check that the following message is displayed, and that the PC has been connected with the NIC (Network Interface Card Board).
   Connected_to_XXX.XXX.XXX.XXX
   220_NET+ARM_FTP_SERVER_1.0_ready
   USER(XXX.XXX.XXX.XXX:(none)):
6. Press the "Enter" key.

NOTE
In case of using the Windows XP or Windows 2003 Server, type "(none)" and press the Enter key.
USER(XXX.XXX.XXX.XXX:(none)): (none)

7. Check that the following message is displayed, and that you could log on to the NIC through the PC.
   230_User_none_logged_in.
8. Input "bin". (Data transfer is switched to the binary mode.)
9. Press the "Enter" key.
   ftp>bin
10. The following messages is displayed.
    200_Type_set_to_I.
11. Type "put" and then the location and name of the update file.
    ftp>put X:\XXX.bin
12. Press the "Enter" key. (Wait to a while until data transfer is completed.)
13. Check that the following message is displayed, and data has been properly transferred to the NIC from the PC.
    200_PORT_command_OK
    150_About_to_open_data_connection.
    226_Transfer_complete.
    ftp: xxxbytes_sent_in_xxxSeconds_xxKbytes/sec.
14. Type "get flash" and press the Enter key. (Wait to a while until data transfer is completed.)
    ftp>get flash
15. The following messages will appear.
    200_PORT_command_OK
    150_About_to_open_data_connection.
    226_Transfer_complete
    ftp: xxxbytes_received_in_xxxSeconds_xxKbytes/sec.
16. Input "quit", and then press the "Enter" key.
    ftp>quit
    221 Goodbye.

17. Input “type flash”.
    C:\>type flash
18. Check that the firmware has been updated properly using the following messages that should appear.
    step 1: Command format is correct
    step 2: Program’s header is right
    step 4: Flash ROM erase OK
    step 5: Flash ROM write OK
    step 6: Program complete
19. Input “exit”, and then press the “Enter” key.
    C:\>exit
20. Check that you exit the [MS-DOS prompt] or [Command prompt] of PC.
21. Delete the “flash” file created in drive C of the PC.
22. Press the main power switch for the copier OFF/ON to restart the copier.

```
C:\>ftp XXX.XXX.XXX.XXX
Connected to XXX.XXX.XXX.XXX
220 NET+ARM FTP SERVER X.X ready
USER(XXX.XXX.XXX.XXX:(none)):
230 User none logged in.
ftp>bin
200 Type set to I.
ftp>put X:\XXX.bin
200 PORT command OK.
150 About to open data connection.
226 Transfer complete
ftp: xxxbytes sent in xxxSeconds xxxKbytes/sec.
ftp>get flash
200 PORT command OK.
150 About to open data connection.
226 Transfer complete.
ftp: xxxbytes received in xxxSeconds xxxKbytes/sec.
ftp>quit
221 Goodbye

C:\>type flash
step 1 : Command format is correct
step 2 : Program’s header is right
step 4 : Flash ROM erase OK
step 5 : Flash ROM write OK
step 6 : Program complete
C:\>exit
```

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Troubleshooting

4. Malfunctions/Warning

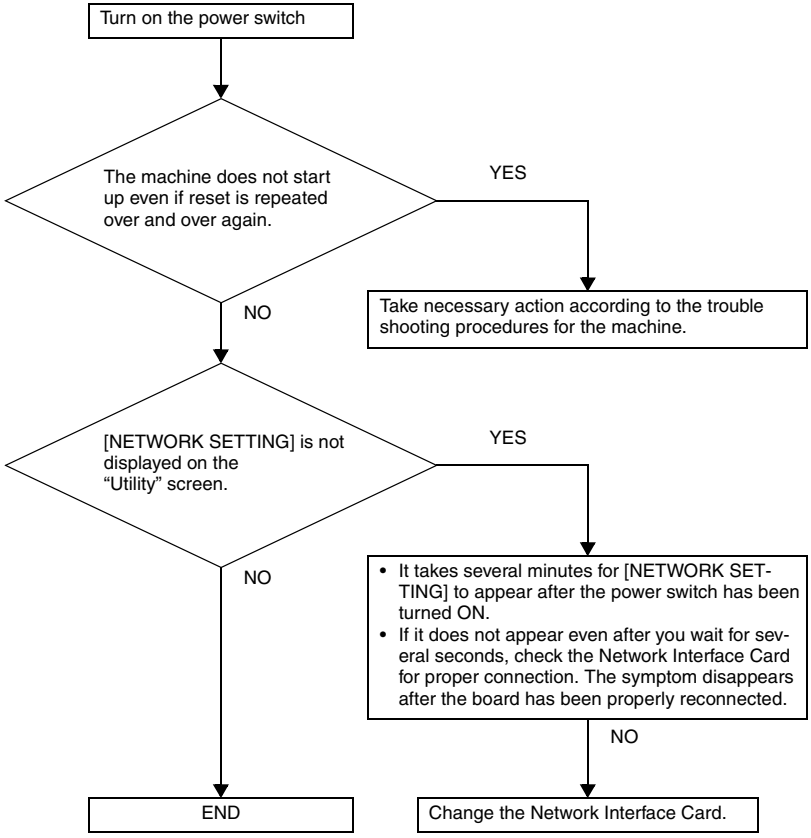
4.1 Troubleshooting Procedure Overview

- If the following symptoms occur when the machine is restarted after the Network Interface Card or the Internet Fax & Network Scan Kit has been mounted, check the board and connectors for proper connection. If the symptom persists, replace the defective part or parts.
- If it is not possible to transfer data correctly with the various settings made on [NETWORK SETTING], the network or telephone line is probably defective.

NOTE
Network setting and line checks should be made by the network administrator (system administrator).

4.2 Troubleshooting Procedure Chart

1. If network settings are not correct, check them by following the flowchart below.



4.3 Main Error Messages and Their Remedies

Message	Cause	Remedy
COMM.ERROR XXXX SERVER	Communication is not possible because of some problem in the machine or the condition of the network or server.	Check the transmission results. Consult with the network administrator.
CANNOT CONNECT XXXX SERVER	A connection to the server cannot be established.	Check that the Ethernet cable is correctly connected. Check the “E-MAIL SETTING 1”, “E-MAIL SETTING 2” and “NETWORK SETTING” settings. Consult with the network administrator.
CANNOT GET IP XXXX SERVER	The IP address could not be assigned by the DNS or DHCP server.	Consult with the network administrator.
DISCONNECT XXXX SERVER	The connection to the server was cut.	Consult with the network administrator.
WRONG PASSWORD XXXX SERVER	The password is incorrect, so the machine could not log onto the server.	For a POP3 server, check the “E-MAIL SETTING 2” setting. Consult with the network administrator.
RECEIVE WRONG DATA	An e-mail that cannot be printed by this machine was received. (For a file attachment in a format other than TIFF-F)	Ask the sender to send a TIFF-F file or text in the correct format.
MEM.FULL/TX CANCEL	While sending an e-mail, the size of the data for the scanned image has exceeded the capacity of the memory.	Retrieve all received e-mail stored in the memory.
MEM.FULL/RX CANCEL XXXX SERVER	While receiving an e-mail, the size of the data for the scanned image has exceeded the capacity of the memory.	Retrieve all received e-mail stored in the memory.
FILE.FULL/TX CANCEL	While sending an e-mail, the maximum of number of managed memory file is used.	Retrieve all received e-mail stored in the memory.
FILE.FULL/RX CANCEL XXXX SERVER	While receiving an e-mail, the maximum of number of managed memory file is used.	Retrieve all received e-mail stored in the memory.
SERVER MEMORY FULL SMTP SERVER	The memory of the SMTP server has become full while sending an e-mail.	Consult with the network administrator.
FTP SERVER ERROR	While uploading scan data, the data could not be correctly uploaded to the FTP server.	Please consult your network administrator for details.

4.4 Troubleshooting Functions

4.4.1 Scan to E-Mail Transmission

No.	Condition	Cause	Action
1	Transmission is not possible.	The connections are incorrect.	Check the LED indicator on the hub, and check the connections.
		The settings necessary for the device are not registered.	Specify the necessary network settings.
		The LAN cable is damaged.	Replace the LAN cable.
2	Transmission is possible, but the image cannot be outputted at the recipient's terminal or computer.	The recipient's terminal is not able to handle the sent image.	Change the size, resolution and coding method so that they are supported by the recipient's terminal, and then try sending the data again.
		The document text was not inserted when the data was sent.	With some e-mail applications, if an e-mail is received containing no text and only an attached file, it may not be possible to open the attached file. Therefore, text should be inserted into the document that is sent.

4.4.2 Internet Fax Transmission

No.	Condition	Cause	Action
1	Transmission is not possible.	The connections are incorrect.	Check the LED indicator on the hub, and check the connections.
		The settings necessary for the device are not registered.	Specify the necessary network settings.
		The LAN cable is damaged.	Replace the LAN cable.
2	An interruption in the transmission was specified, but the transmission was not interrupted.	It takes some time to interrupt an Internet fax transmission.	Wait until the transmission is interrupted.

4.4.3 Internet Fax Reception

No.	Condition	Cause	Action
1	Reception is not possible.	The connections are incorrect.	Check the LED indicator on the hub, and check the connections.
		The setting to not automatically check for new e-mail messages has been specified.	Specify a time interval for automatically checking for new e-mail messages. Receive manually.
		The settings necessary for the device are not registered.	Specify the necessary network settings.
		The same POP3 user name is being used by a different e-mail application or another user.	Do not use the same POP3 user name that is used by a different e-mail application.
		The LAN cable is damaged.	Replace the LAN cable.
2	The data is received, but not printed.	An e-mail message with data of an incompatible format attached or with no data was received.	Ask the sender to send a TIFF-F file or text.
		The memory is full.	Print saved documents and reduce the amount of memory that is used, and then ask the sender to send the data again.
3	The same document is received many times.	Since the size of the mail is too large, the connection with the server times out while the data is being received.	Specify that the data be kept on the computer, and delete the corresponding e-mail messages from the server. Ask the sender to try sending e-mail messages of smaller sizes.
4	An interruption in the reception was specified, but the reception was not interrupted.	It takes some time to interrupt an Internet fax reception.	Wait until the transmission is interrupted.

4.4.4 Direct Fax Sending (Gateway TX)

No.	Condition	Cause	Action
1	Data does not arrive at the copier.	The Unimessage Pro I-Net Portal settings are incorrect.	Check the Unimessage Pro I-Net Portal settings.
		Since the size of the received data is large, it cannot be received due to the server's limitations.	Reduce the size of the data, for example, by decreasing the number of pages, and then try sending again.
2	A fax cannot be sent from this copier.	The communication mode for gateway transmissions is incorrectly specified.	The "GATEWAY TX" parameter must be set to "ENABLE", and the communication mode must be set correctly.

4.4.5 PageScope Web Connection

No.	Condition	Cause	Action
1	A connection with PageScope Web Connection cannot be established.	The IP address for the device is not specified correctly.	Specify the IP address.
		The URL setting in the Web browser is incorrect.	In the "Address" box, type the IP address of the specified device.
		The settings in the Web browser are incorrect.	Even though the device can be accessed, certain settings must be specified according to the network configuration in order to establish a connection. For details, contact your network administrator.
		If a proxy is specified with the browser and the IP address of this copier cannot be recognized by the proxy server, the PageScope Web Connection window cannot be displayed.	Use the proxy settings in the browser to add the IP address of this copier to the list of exceptions that will not use the proxy server.
		The LAN cable is damaged.	Replace the LAN cable.
2	Could not login using Administrator mode.	Before this login, a different user name and password had been entered.	Once login is successful, that user name and password is saved in the browser until the browser is closed. Close the browser, and then start it up again.
3	The text in the window is disorganized.	The browser is too small.	Increase the size of the browser.
		An appropriate font size is not selected.	Specify an appropriate font size for the computer and browser.
4	Some deleted characters remain in the window.	Operations differ depending on the browser used.	Reload the browser window or rescan.
5	The number of digits in an input or display area and the number of characters that can be registered are different.	Depending on the browser, scroll within the input area. If this is not possible, this should not affect the actual setting operation, although it may be a problem for displaying.	—

No.	Condition	Cause	Action
6	Some characters cannot be specified or displayed.	Depending on the operating system, some characters cannot be specified or displayed.	—
7	Space characters cannot be specified or displayed.	Spaces entered at the end of words may be removed.	—
8	Entered data was erased when an error occurred while specifying settings.	Depending on the browser, settings that appear as “*”, such as passwords, may be erased.	—

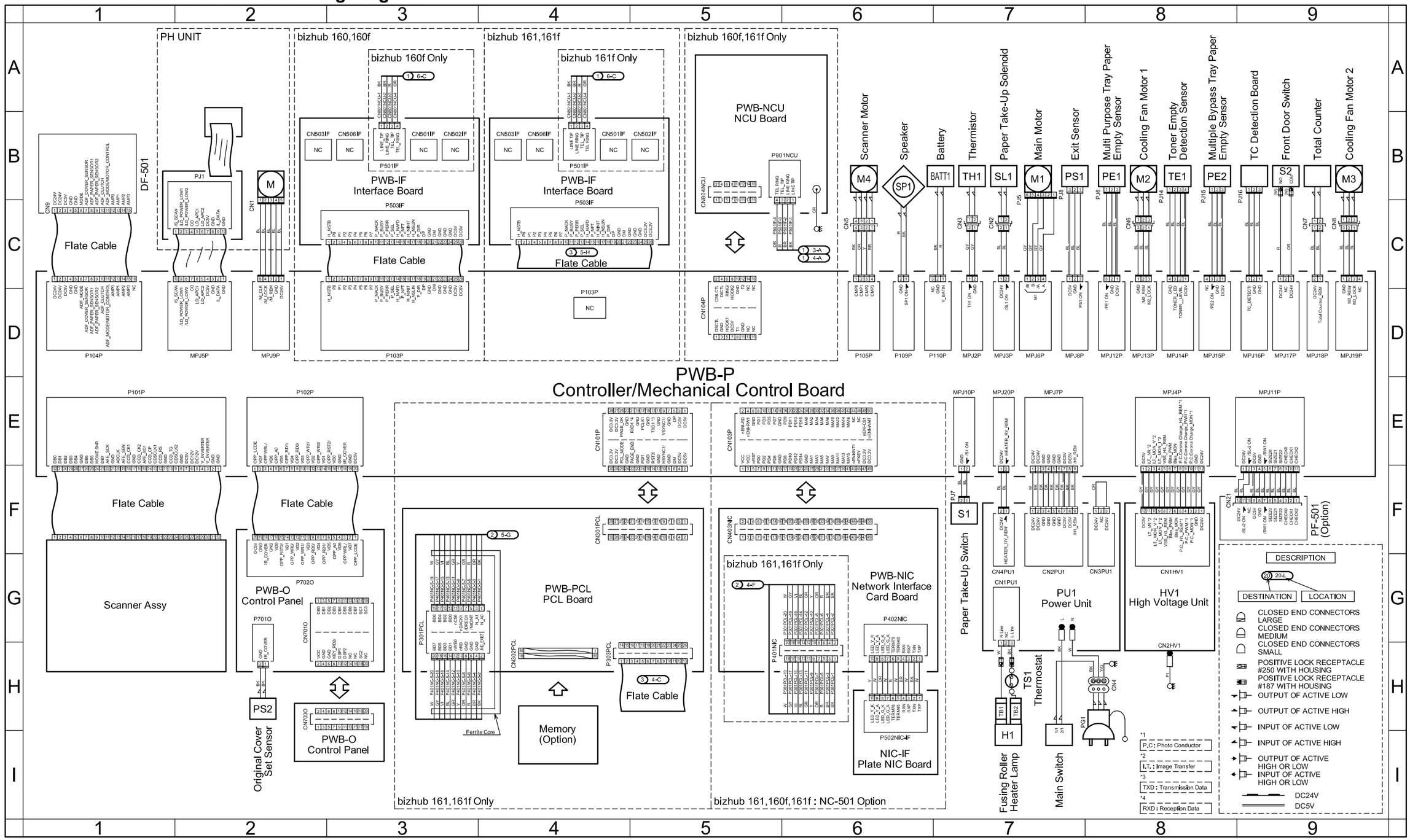
4.5 List of Communication Error Codes

- The following error codes appear in TX Result Report, RX Result Report.

Error code	Description
0072	A connection to the SMTP server cannot be established.
0073	Communication is not possible because of some problem in the machine or the condition of the network or SMTP Server.
0074	The connection to the SMTP server was cut.
0075	The memory of the SMTP server has become full while sending an e-mail.
007B	The connection is disconnected during gateway transmission.
007C	A Direct fax that cannot be forward transmit by this machine was received. (For a file attachment in a format other than TIFF-F)
007D	While receiving a Direct fax, the size of the data for the scanned image has exceeded the capacity of the memory.
007E	While receiving a Direct fax, the maximum of number of managed memory file is used.
0096	The IP address could not be assigned by the DNS server.
0097	The IP address could not be assigned by the DNS server.
0098	The IP address could not be assigned by the DNS server.
009B	A connection to the DNS server cannot be established.
00a2	While receiving an e-mail, the maximum of number of managed memory file is used.
00a3	A connection to the POP3 server cannot be established.
00a4	The password is incorrect, so the machine could not log onto the POP3 server.
00a5	Communication is not possible because of some problem in the machine or the condition of the network or POP Server.
00a6	The connection to the POP3 server was cut.
00a7	An e-mail that cannot be printed by this machine was received. (For a file attachment in a format other than TIFF-F)
00a8	While receiving an e-mail, the size of the data for the scanned image has exceeded the capacity of the memory.
00A9	A connection to the FTP server cannot be established.
00AA	The password is incorrect, so the machine could not log onto the FTP server.
00AB	Communication is not possible because of some problem in the machine or the condition of the network or FTP Server.
00AC	The connection to the FTP server was cut.
00AD	The FTP server cannot store the data that is sent from the machine.

Blank page

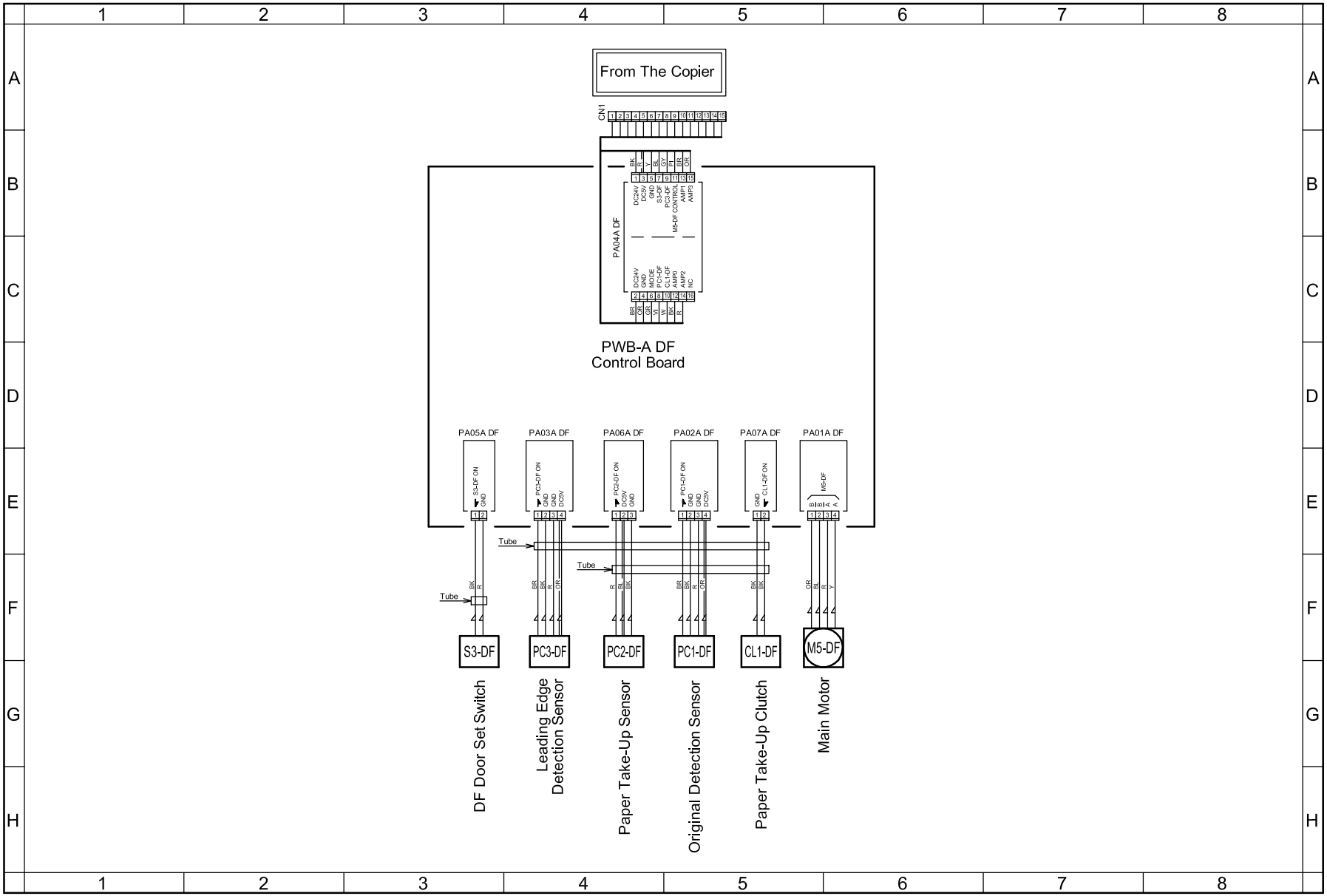
bizhub 160/161/160f/161f Overall Wiring Diagram



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Apr.2005

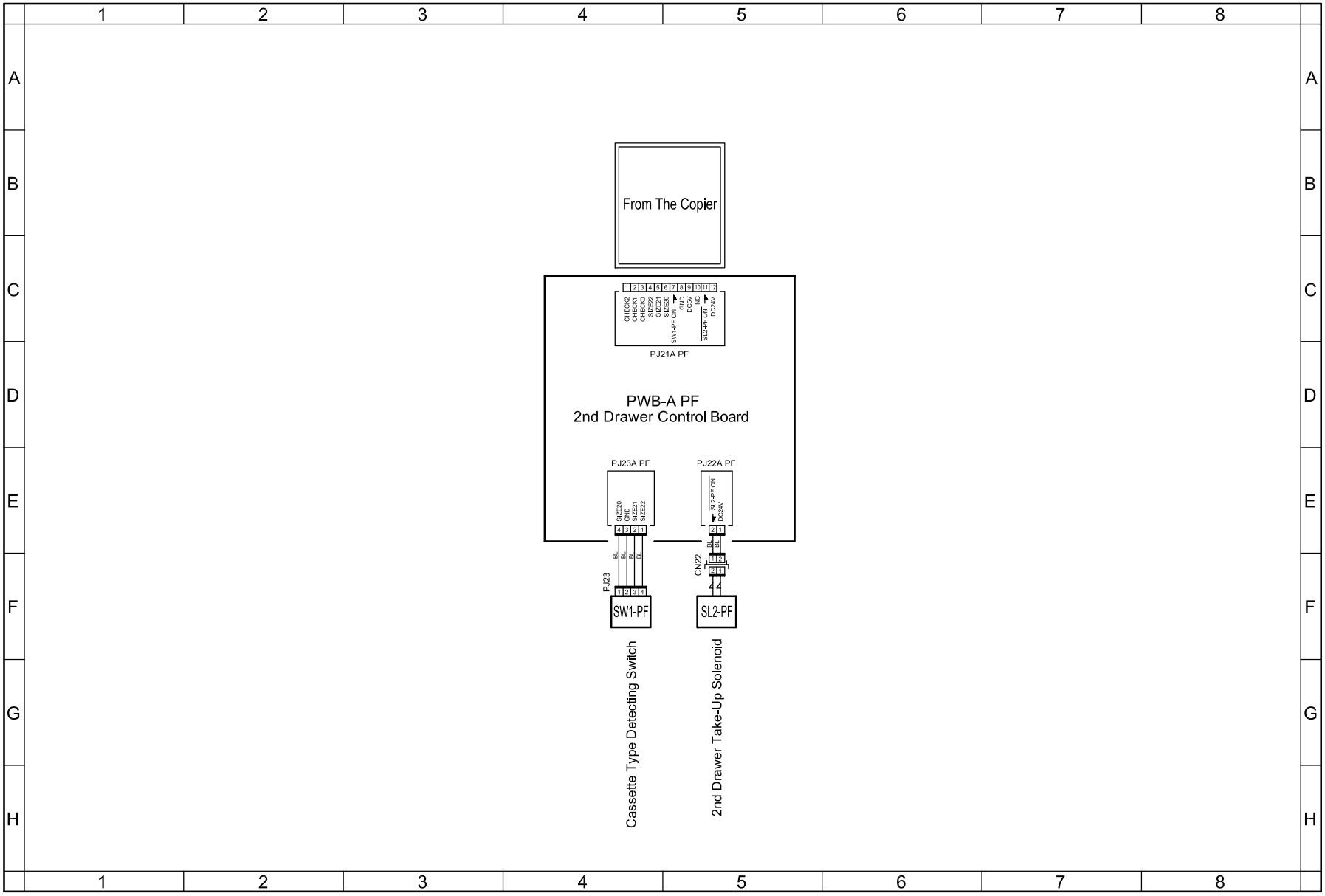
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DF-501 Overall Wiring Diagram



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PF-501 Overall Wiring Diagram



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